

Maine's

Personalized Alternate Assessment Portfolio

PAAP Rubrics

2004-05

Rubric Levels 1-4

**For English Language Arts (Reading and Writing),
Mathematics, and Science and Technology**

based on the Maine *Learning Results*

A Guide to Maine's Personalized Alternate Assessment Portfolio (PAAP) Performance Indicator Rubrics

The MEA PAAP

Students may participate in the State's Maine Educational Assessment (MEA) through any of three avenues (standard administration, accommodations, or alternate). A team must make the decision as to which avenue(s) is appropriate for an individual student. The avenue of participation may differ from Content Area to Content Area (i.e., student may use accommodations for Mathematics and Science and Technology, but participate in Reading and Writing through alternate assessment). A list of approved MEA accommodations is provided in the *Policies and Procedures for Accommodations and Alternate Assessment to the MEA* which are contained in the 2004-05 PAAP Manual. Accommodations are designed to provide access to the assessment for students without changing the content of what is being measured.

The PAAP Rubrics are designed for planning and implementation of the State's alternate assessment to the MEA, the PAAP. The PAAP has been designed to allow participation in the MEA for those students who require accommodations so significant that they would compromise the validity of the assessment (i.e., student would need accommodations that are not listed in *Policies and Procedures for Accommodation and Alternate Assessment to the MEA*). The PAAP, like the MEA, will provide a snapshot in time of the individual student's performance. A broader picture will emerge as the student results on the MEA PAAP are looked at along with results on Local Assessments. The population appropriate for inclusion in this alternate avenue to assessment may include students with Individual Education Plans (IEPs) who have significant disabilities, Limited English Proficiency (LEP), or 504 plans to access curriculum, instruction, and assessment based on Maine's *Learning Results*.

PAAP Performance Indicator Rubrics

Rubric Levels

The PAAP Rubrics provide a common basis for the planning and assessment of standards-related instruction and assessment in a system that allows students to work on the Content Standards, Performance Indicators, and tasks best suited to their individual needs. All PAAP Tasks must be aligned with the PAAP Rubrics for the Content Standards and Rubric Level on which the student is working. Rubric Level 1 is based on the Maine *Learning Results* Performance Indicators for Pre-K-2; Rubric Level 2, grades 3-4; Rubric Level 3, grades 5-8; and, Rubric Level 4, grades 9-12. The first two Rubric Levels include developmentally backed down Performance Level descriptors written to ensure access to instruction and assessment for all students.

The other two Rubric Levels (3 & 4) are more holistic, since they correspond to grade levels being assessed on the MEA.

Student work included in a PAAP aligned to Rubric Levels 2, 3, or 4, must be done using materials designed for students at or near the grade span on which the Rubric Level is based (ex., In order to score at Rubric Level 2, a student must be using material formatted for grades 2-4). The format levels for materials are described in the PAAP Rubrics *Developmental Characteristics of Reading* and *Developmental Characteristics of Writing* on pages 13 and 14 of the PAAP ELA Rubrics.

Format of the PAAP Rubrics

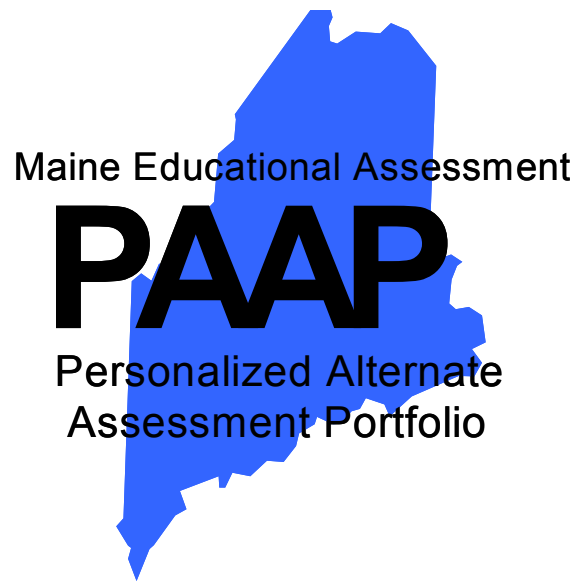
The MEA PAAP Rubrics are formatted by Content Area, Content Standard, and Rubric Level. There are three Content Area Sections, each color coded: 1) English Language Arts (pink); 2) Mathematics (blue); and 3) Science and Technology (green). At the top of each page, the reader will find a header with the Content Area; Content Standard letter and title (as written in Maine's *Learning Results*); and the Rubric Level. The *Learning Results* student expectations for that Content Standard are written in italics below the Content Standard.

The header of each page is followed by a five column table. The fifth column, in bold print consists of the *Learning Results* Performance Indicators for the Content Standard as written for the grade span on which the Rubric Level is based. For Rubric Levels 1 and 2, each Performance Indicator is backed down developmentally as one reads the columns from right to left. The descriptors for each Performance Level provide measurable descriptors for specific Performance Indicators. The developmental Performance Levels range from Performance Level 4, identifying the knowledge and skills that are needed to meet the standards for that Rubric Level; to Performance Level 1, the access point for each Performance Indicator at that Rubric Level.

Teachers are instructed to plan instruction aligned to the PAAP Performance Level descriptor for each Content Standard and Performance Indicator selected as appropriate for inclusion in a student's instructional program (ex., IEP); design or use assessment tasks aligned to that Performance Level descriptor while also, within the task, providing the opportunity for the student to demonstrate a higher Performance Level; collect the resulting work; and submit the collection with accompanying PAAP forms for scoring. The PAAP Rubrics can be found online at www.mecas.org/paap/rubrics.

****All of the Rubrics used for the MEA PAAP may also be used for Local Alternate Assessment. The Local Assessment System includes three additional English Language Arts Content Standards in English Language Arts, and all of the Content Standards for Social Studies and Health and Physical Education. Rubrics for those Content Standards are available in the Local Assessment Section of the PAAP Web Page at www.mecas.org/paap/localpaap. You may get further information on Local Alternate Assessment requirements in the Local Assessment System Embedded Guide for Accommodations and Alternate Assessment through the same URL.***





English Language Arts

Rubric Levels 1-4

based on the Maine *Learning Results*

ELA Content Standard A - Process of Reading

PAAP Rubric Level 1

Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read.

Performance Level 1	Performance Level 2	Performance Level 3 <i>Students <u>must read</u> key words and pictures for Performance Indicators 2-6</i>	Performance Level 4 <i>Students <u>must read</u> text for Performance Indicators 2-6</i>	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>A1. Student uses signs, symbols, and/or pictures to communicate.</p> <p>A2. Student can match items to pictures or symbolic representations of them.</p> <p>A3. Student can, using patterns, choose what symbol, sign, or picture will come next.</p> <p>A4. When using pictures, signs, and/or symbols, student corrects his/her communication errors.</p> <p>A5. Student can figure out at least two unknown symbols, using a variety of strategies.</p> <p>A6. Student can follow directions given through signs and symbols.</p> <p>A7. Student attends to presenter(s).</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student seeks signs, symbols, and/or pictures to communicate.</p> <p>A2. Student can use/share information gained by looking at symbols/pictures.</p> <p>A3. Student uses pictures in a book or other print material to make reasonable predictions about what will happen in a story.</p> <p>A4. When "reading" pictures, student self-corrects initial descriptions, thoughts, etc.</p> <p>A5. Student consistently uses one strategy (i.e., self-correcting, context clues, picture clues) to identify unknown words.</p> <p>A6. Student uses clues within pictures strategies as aids in developing comprehension.</p> <p>A7. Student can correctly answer at least two questions related to presentations.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student seeks out books and/or other print materials for pleasure.</p> <p>A2. Student can use/share information gained by a combination of reviewing pictures and reading key words in context.</p> <p>A3. Student uses pictures and reads key words in books or other print materials to make reasonable predictions about what will happen in a story.</p> <p>A4. When reading key words, student rereads to ensure match between word sounds and graphic symbols.</p> <p>A5. Student consistently applies two strategies (i.e., rereading, context clues, knowledge of word structure, letter/sound relationships, etc.) to identify unknown words.</p> <p>A6. Student uses pictures and reads key words as aids in developing comprehension.</p> <p>A7. Student can ask one appropriate question and give other responses that are specifically related to the content of presentations by the teacher or classmates.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student seeks out books and other print materials to read for pleasure.</p> <p>A2. Student can use/share information gained by reading materials.</p> <p>A3. Student uses pictures and reads text in books or other print material to make reasonable and related predictions about what will happen in a story, and confirms the accuracy of those predictions.</p> <p>A4. When reading print material, student regularly rereads to make sense of material.</p> <p>A5. Student figures out unknown words using a variety of strategies including rereading, context clues, and knowledge of word structures and letter-sound relationships.</p> <p>A6. Student recognizes and uses clues within the text (sentence structure, word meanings), rereading and other strategies as aids in developing fluency and comprehension when reading.</p> <p>A7. Student can ask two or more appropriate questions and give other responses that are specifically related to the content of presentations by the teacher or classmates.</p>	<p>Students will be able to:</p> <p>A1. Seek out and enjoys experiences with books and other print materials.</p> <p>A2. Demonstrate an understanding that reading is a way to gain information about the world.</p> <p>A3. Make and confirm predictions about what will be found in a text.</p> <p>A4. Recognize and use rereading as an aid to developing fluency and to understanding appropriate material.</p> <p>A5. Figure out unknown words using a variety of strategies including rereading, context clues, and knowledge of word structures and letter-sound relationships.</p> <p>A6. Recognize and use clues within the text (sentence structure, word meanings), rereading, and other strategies as aids in developing fluency and comprehension.</p> <p>A7. Ask questions and give other responses after listening to presentations by the teacher or classmates.</p>

ELA Content Standard A - Process of Reading

PAAP Rubric Level 2

Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read.

Performance Level 1 <i>Reading Format Level 2 or above*</i>	Performance Level 2 <i>Reading Format Level 2 or above*</i>	Performance Level 3 <i>Reading Format Level 3 or above*</i>	Performance Level 4 <i>Reading Format Level 4*</i>	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>A1. Student is aware of the purpose of two resources (ex., dictionary, glossary).</p> <p>A2. Student understands why and how reading speed should be adjusted to suit the purpose and difficulty of fiction and non-fiction.</p> <p>A3. After hearing/viewing a selection, student can identify whether it is primarily intended to entertain or inform.</p> <p>A4. When given a choice of three activities, including reading, student chooses to read materials at Format Level 2 or above*, for enjoyment.</p> <p>A5. Student can read a narrative or informational text, presented through a Format Level 2 or above*.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student understands two or more basic skills necessary to use a dictionary, glossary, or other reference source (ex., alphabetizing, guide words).</p> <p>A2. Student adjusts reading speed to suit purpose of material at Format Level 2 or above*.</p> <p>A3. After hearing/viewing two selections, student can identify which is intended to entertain and which is intended to inform.</p> <p>A4. When given a choice of four activities, including reading, student chooses to read materials at Format Level 2 or above*, for enjoyment.</p> <p>A5. Student can read two narrative or informational texts, presented through a Format Level 2 or above*, fluently.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can determine the meaning of unknown words by using a modified or simplified version of a dictionary or other reference source (ex., picture dictionary, primary grade level dictionary).</p> <p>A2. Student adjusts reading speed to suit purpose and difficulty of material in Format Level 2 and 3*.</p> <p>A3. After hearing/viewing three selections, student can recognize which is intended to entertain; which to inform; and which to persuade.</p> <p>A4. When given a choice of five activities, including reading, student chooses to read materials at Format Level 3 or above*, for enjoyment.</p> <p>A5. Student can read three genres of narrative and informational text, presented through a Format Level 3 or above*, fluently.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can determine the meaning of unknown words by using a dictionary, glossary, or other reference source designed for 3rd/4th grade students.</p> <p>A2. Student adjusts reading speed to suit purpose and difficulty of material in Format Levels 3 and 4*.</p> <p>A3. Given multiple types of selections, student can recognize text that is primarily intended to persuade.</p> <p>A4. When given a choice of five activities, including reading, student chooses to read materials at Format Level 4*, for enjoyment.</p> <p>A5. Student can read four types of narrative and informational text, presented through a Format Level 4*, fluently.</p>	<p>Students will be able to:</p> <p>A1. Determine the meaning of unknown words by using a dictionary, glossary, or other reference sources.</p> <p>A2. Adjust reading speed to suit purpose and difficulty of material.</p> <p>A3. Recognize when a text is primarily intended to persuade.</p> <p>A4. Select texts for enjoyment.</p> <p>A5. Read a variety of narrative and informational texts independently and fluently.</p>

**See definitions of Format Levels in the “Developmental Characteristics of Reading” on page ELA 13.*

ELA Content Standard B - Literature and Culture

PAAP Rubric Level 1

Students will use reading, listening, and viewing strategies to experience, understand, and appreciate literature and culture.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>B1. Student can identify pictures of named events from among a group of 2 or more pictures depicting varied events.</p> <p>B2. After an event is demonstrated/described, student can identify from two given options (one that is reasonable) what might happen next.</p> <p>B3. Student can identify from given options, an element from a story about a culture other than his/her own.</p> <p>B4. Given two sets of objects/pictures, student can identify which set is real/not real (ex., cartoon animals/pictures of real animals).</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can put key events from a simple story in correct sequence.</p> <p>B2. After a portion of a story is heard, viewed, or read, student can choose from two given options (one that is reasonable) what might happen next.</p> <p>B3. Student can identify one similarity or one difference between story elements (e.g., plot, setting, character, conflict resolution) in two stories from different cultures.</p> <p>B4. Given an array of print materials, student can locate and identify pictures of things that are real and pictures of things that are not real.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can retell selected events from a story, using words or pictures.</p> <p>B2. After a portion of a story is heard, read, or viewed, student can make logical predictions about events to follow in the story, and, given two options for an ending (one plausible, one not), choose the one that makes sense.</p> <p>B3. Student can identify, at least one similarity and one difference between story elements (e.g., plot, setting, character, conflict resolution) in two stories from different cultures.</p> <p>B4. After reading, hearing, or listening to two stories (one fiction, one non-fiction) student can distinguish between them.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can retell a story using words or pictures, including the beginning, middle, and end in correct sequence.</p> <p>B2. After a portion of a story is heard, read, or viewed, student can make logical predictions about events to follow in the story or suggest a logical alternative ending.</p> <p>B3. Student can identify similarities and differences in story elements (e.g., plot, setting, character, conflict resolution) in works from three cultures.</p> <p>B4. After reading, hearing, or listening to three stories, student can distinguish which are fiction and which are non-fiction.</p>	<p>Students will be able to:</p> <p>B1. Understand the basic plot of simple stories.</p> <p>B2. Draw logical conclusions about what will happen next or how things might have turned out differently in a story.</p> <p>B3. Identify differences and similarities in story elements (e.g., plot, setting, characters, conflict resolution) in works from various cultures.</p> <p>B4. Distinguish between fiction and non-fiction.</p>

ELA Content Standard B - Literature and Culture

PAAP Rubric Level 2

Students will use reading, listening, and viewing strategies to experience, understand, and appreciate literature and culture.

Performance Level 1 <i>Reading Format Level 2 or above*</i>	Performance Level 2 <i>Reading Format Level 2 or above*</i>	Performance Level 3 <i>Reading Format Level 3 or above*</i>	Performance Level 4 <i>Reading Format Level 4*</i>	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>B1. Student can identify one aspect of the culture or geography pertinent to text he/she reads, listens to, or views.</p> <p>B2. Student can identify the actions of a character in two literary pieces.</p> <p>B3. Student looks at and listens to speakers.</p> <p>B4. Student can identify his/her thoughts about literature heard, viewed, or read.</p> <p>B5. Student can identify one character in a story.</p> <p>B6. Student can make reasonable conclusions about the consequences of one action of a character.</p> <p>B7. Student can identify one character or event from a story and describe/demonstrate how the character or event is like a person or event in his/her own life.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can identify one aspect of the culture and one aspect of the geography pertinent to the texts he/she reads, listens to, or views.</p> <p>B2. Student can relate actions of a character in two or more literary pieces to his/her own actions.</p> <p>B3. Student listens attentively to speakers and responds politely to them.</p> <p>B4. Student can share his/her thoughts about literature heard, viewed, or read with peers.</p> <p>B5. Student can identify two characters in a story containing several characters.</p> <p>B6. Student can make reasonable conclusions about the motives and consequences of the actions of one character.</p> <p>B7. Student can identify a character or event from each of two sources and describe/demonstrate how they are like people or events in his/her own life.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can identify at two aspects of the culture and two aspects of the geography pertinent to the texts he/she reads, listens to, or views.</p> <p>B2. Student can relate actions of a character in two or more literary pieces to the actions of others.</p> <p>B3. Student attends to speakers by listening attentively, responding politely, and asking appropriate questions or making appropriate comments.</p> <p>B4. Student can share his/her responses to literature heard, viewed, or read, with peers, and cite reasons for the responses.</p> <p>B5. Student can identify two important characters from two works written with Format Level 3 or above*, and containing several characters.</p> <p>B6. Student can make reasonable conclusions about the motives and consequences of the actions of two characters, and justify one of his/her conclusions.</p> <p>B7. Student can identify and describe/demonstrate how characters and situations found in two different types of materials are like people or events in his/her own life, or in other works.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can identify multiple aspects of the culture and geography pertinent to the texts he/she reads, listens to, or views.</p> <p>B2. Student can use the actions of characters in literary pieces to demonstrate understanding and appreciation of the action of others.</p> <p>B3. Student attends to speakers by listening attentively, responding politely, asking appropriate questions and making appropriate comments.</p> <p>B4. Student can share his/her responses to literature with peers, cite reasons for responses, and make comparisons to other reading or viewing, or to life experiences.</p> <p>B5. Student can identify two important characters in three works written at Format Level 4*, and containing several characters.</p> <p>B6. Student can make and justify reasonable conclusions about the motives of two characters and the consequences of their actions.</p> <p>B7. Student can identify and describe/demonstrate how characters and situations found in three different types of materials are like people or events in his/her own life or in other works.</p>	<p>Students will be able to:</p> <p>B1. Demonstrate awareness of the culture and geography pertinent to the texts they read.</p> <p>B2. Use literary pieces to better understand and appreciate the action of others.</p> <p>B3. Respond to speakers in a variety of ways (e.g., listening attentively, responding politely).</p> <p>B4. Share responses to quality literature with peers, citing reasons and making comparisons to other reading, or viewing, or to life experiences.</p> <p>B5. Identify important characters in quality works containing several characters.</p> <p>B6. Make and justify conclusions about the motives of characters and the consequences of their actions.</p> <p>B7. Identify and explain how characters and situations found in various materials are like people or events in their own lives or in other works.</p>

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ELA Content Standard B - Literature and Culture (*continued*)

PAAP Rubric Level 2

Performance Level 1 <i>Reading Format Level 2 or above*</i>	Performance Level 2 <i>Reading Format Level 2 or above*</i>	Performance Level 3 <i>Reading Format Level 3 or above*</i>	Performance Level 4 <i>Reading Format Level 4*</i>	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains information that:</p> <p>B8. Student can identify dialogue in text.</p> <p>B9. Student can recognize basic elements of plot (i.e., setting, characters, problem, climax, resolution) and recount events or important details, from material read, heard, or viewed.</p> <p>B10. Student can apply effective strategies (ex., prior knowledge, word identification, understanding of textual features, vocabulary development, context clues, characteristics of genre) to read and interpret information about character, plot, and theme from two types of fiction (e.g., fantasies, fables, myths, mysteries, realistic and historical fiction, adventures, and humorous tales) written with characteristics of Format Level 2 or above*.</p> <p>B11. Student can apply effective strategies to the reading and use of nonfiction (e.g., reference sources, articles, histories, biographies, autobiographies, diaries, and letters) written with characteristics of Format Level 2 or above*, in order to gain facts.</p> <p>B12. When presented with two selections, both with the same enduring theme, student can identify the common theme.</p>	<p>Portfolio contains information that:</p> <p>B8. Student can describe/demonstrate the difference between dialogue and narrative.</p> <p>B9. Student can recognize basic elements of plot (i.e., setting, characters, problem, climax, resolution) and recount events, and important details from material read, heard, or viewed.</p> <p>B10. Student can apply effective strategies (ex., prior knowledge, word identification, understanding of textual features, vocabulary development, context clues, characteristics of genre) to read and interpret information about character, plot, theme, and dialogue from three types of fiction (e.g., fantasies, fables, myths, mysteries, realistic and historical fiction, adventures, and humorous tales) written with characteristics of Format Level 2 or above*.</p> <p>B11. Student can apply effective strategies to the reading and use of nonfiction (e.g., reference sources, articles, histories, biographies, autobiographies, diaries, and letters) written with characteristics of Format Level 2 or above*, in order to gain and organize facts related to a topic.</p> <p>B12. When presented with multiple selections reflecting two themes, student can identify the two themes.</p>	<p>Portfolio contains information that:</p> <p>B8. Student can describe/demonstrate how dialogue contributes (ex., helps understand the character speaking) to a story or text.</p> <p>B9. Student can recognize basic elements of plot (i.e., setting, characters, problem, climax, resolution) and recount events, important details and an idea from material read, heard, or viewed.</p> <p>B10. Student can apply effective strategies (ex., prior knowledge, word identification, understanding of textual features, vocabulary development, context clues, characteristics of genre) to read and interpret information about character, plot, theme, and dialogue from three types of fiction (e.g., fantasies, fables, myths, mysteries, realistic and historical fiction, adventures, and humorous tales) written with characteristics of Format Level 3 or above*.</p> <p>B11. Student can apply effective strategies to the reading and use of nonfiction (e.g., reference sources, articles, histories, biographies, autobiographies, diaries, and letters) written with characteristics of Format Level 3 or above*.</p> <p>B12. Student can identify enduring themes of literature (e.g., themes of coming of age, love and duty, heroism, and appearance versus reality) in given materials.</p>	<p>Portfolio contains information that:</p> <p>B8. Student can describe/ demonstrate how dialogue relates and contributes (ex., helps understand the character speaking, helps to move the action along), to a story or text.</p> <p>B9. Student can recognize basic elements of plot (i.e., setting, characters, problem, climax, resolution) and recount events, ideas, and important details from material read, heard, or viewed.</p> <p>B10. Student can apply effective strategies (ex., prior knowledge, word identification, understanding of textual features, vocabulary development, context clues, characteristics of genre) to read and interpret information about character, plot, theme and dialogue from four types of fiction (e.g., fantasies, fables, myths, mysteries, realistic and historical fiction, adventures, and humorous tales) written with characteristics of Format Level 4*.</p> <p>B11. Student can apply effective strategies to the reading and use of nonfiction (e.g., reference sources, articles, histories, biographies, autobiographies, diaries, and letters) written with characteristics of Format Level 4*.</p> <p>B12. Student can identify and explain enduring themes of literature (e.g., themes of coming of age, love and duty, heroism, and appearance versus reality) from given materials.</p>	<p>Students will be able to:</p> <p>B8. Understand how dialogue relates and contributes to a story or text.</p> <p>B9. Recognize basic elements of plot and recount events, ideas, and important details from material read, heard, or viewed.</p> <p>B10. Apply effective strategies to the reading and interpretation of fiction (e.g., fantasies, fables, myths, mysteries, realistic and historical fiction, adventures, and humorous tales) that is appropriately complex in terms of character, plot, theme, and dialogue and appropriately sophisticated in style, point of view, and use of literary devices.</p> <p>B11. Apply effective strategies to the reading and use of nonfiction (e.g., reference sources, articles, histories, biographies, autobiographies, diaries, and letters) using texts with an appropriate complexity of content and sophistication of style.</p> <p>B12. Demonstrate understanding of enduring themes of literature (e.g., themes of coming of age, love and duty, heroism, and appearance versus reality).</p>

**See definitions of Format Levels in the “Developmental Characteristics of Reading” on page ELA 13.*

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ELA Content Standard D – Informational Text**PAAP Rubric Level 1**

Students will apply reading, listening, and viewing strategies to informational texts across all areas of the curriculum.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio contains evidence that: D1. Given a one step direction , student will respond appropriately.	Portfolio contains evidence that: D1. Given a multi-step direction , student will respond appropriately.	Portfolio contains evidence that: D1. After reading, hearing, or viewing expository information , student will be able to identify the main idea .	Portfolio contains evidence that: D1. After reading, hearing, or viewing expository information , student will be able to demonstrate understanding of the main idea .	Students will be able to: D1. Understand the main idea of simple expository information.

ELA Content Standard D – Informational Text

PAAP Rubric Level 2

Students will apply reading, listening, and viewing strategies to informational texts across all areas of the curriculum.

Performance Level 1 <i>Reading Format Level 2 or above*</i>	Performance Level 2 <i>Reading Format Level 2 or above*</i>	Performance Level 3 <i>Reading Format Level 3 or above*</i>	Performance Level 4 <i>Reading Format Level 4*</i>	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>D1. Student can identify chapter and section headings, topic sentences, and summary sentences.</p> <p>D2. Student can use one of the following informational parts of a text: index, table of contents, glossary, appendices, appropriately.</p> <p>D3. Student can read to find facts.</p> <p>D4. Student is able to give a list of key facts from an informational text.</p> <p>D5. When presented with two or more passages, student can identify the one intended to instruct.</p> <p>D6. Student can pick out technical terms specific to a single topic in given text (ex., blood/bones/heart in text on human body).</p> <p>D7. Student can recognize when and how one new piece of information in Level 2 text connects to his/her prior knowledge.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can identify chapter and section headings, topic sentences, and summary sentences, and use two of them to find information.</p> <p>D2. Student can use two of the following informational parts of a text: index, table of contents, glossary, appendices, appropriately.</p> <p>D3. Student is able to read to answer specific questions, form an opinion, or skim for information.</p> <p>D4. Student is able to identify the main idea or concept from an informational text.</p> <p>D5. When presented with three or more passages, student can identify those intended to instruct and those intended to persuade.</p> <p>D6. Student can pick out technical terms specific to two topics from given text (ex., blood/bones/heart in text on human body systems).</p> <p>D7. Student can recognize when and how two new pieces of information in a Level 2 text connect to his/her prior knowledge.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can identify chapter and section headings, topic sentences, and summary sentences, and use all four to find information.</p> <p>D2. Student can use three of the following informational parts of a text: index, table of contents, glossary, appendices, appropriately.</p> <p>D3. Student is able to read for two of the purposes listed: to answer specific questions, form an opinion, skim for information.</p> <p>D4. Student is able to identify the main idea or concept and two details from an informational text.</p> <p>D5. Given a group of five passages, some intended to instruct, some to persuade, student can recognize the intent of each.</p> <p>D6. Student demonstrates understanding of three technical terms (ex., blood/bones/heart in text on human body) used in instructional and informational texts.</p> <p>D7. Student can recognize when and how two new pieces of information in a Level 3 text connect to his/her prior knowledge.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can use information contained in chapter and section headings, topic sentences, and summary sentences to construct the main ideas.</p> <p>D2. Student can use four of the following informational parts of a text: index, table of contents, glossary, appendices, appropriately.</p> <p>D3. Student is able to read for each of the purposes listed: to answer specific questions, form an opinion, skim for information.</p> <p>D4. Student is able to summarize informational texts by identifying the main idea or concept and three supporting details.</p> <p>D5. Student can recognize when a text is primarily intended to instruct or persuade.</p> <p>D6. Student demonstrates understanding of four common technical terms (ex., blood/bones/heart in text on human body) used in instructional and informational texts.</p> <p>D7. Student can recognize when and how three pieces of new information in Level 4 text connect to his/her prior knowledge.</p>	<p>Students will be able to:</p> <p>D1. Use information contained in chapter and section headings, topic sentences, and summary sentences to construct the main ideas.</p> <p>D2. Use various informational parts of a text (e.g., index, table of contents, glossary, appendices).</p> <p>D3. Read for a variety of purposes (e.g., to answer specific questions, to form an opinion, to skim for information).</p> <p>D4. Summarize informational texts (e.g., identify the main idea or concept and the supporting detail).</p> <p>D5. Recognize when a text is primarily intended to instruct or to persuade.</p> <p>D6. Understand common technical terms used in instructional and informational texts.</p> <p>D7. Recognize when and how new information in a text connects to prior knowledge.</p>

**See definitions of Format Levels in the “Developmental Characteristics of Reading” on page ELA 13.*

ELA Content Standard F – Standard English Conventions

PAAP Rubric Level 1

Students will write and speak correctly, using conventions of standard written and spoken English.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>F1. Student can use signs, symbols, and/or gestures to communicate a thought (ex., need, identification of object or person).</p> <p>F2. Student can participate in meaningful communication through spoken words, gestures, symbols, and/or signs.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can arrange pictures, symbols, words, etc., to communicate a complete thought(s).</p> <p>F2. Student can participate in meaningful communication through spoken words, gestures, symbols, signs, etc., which varies based on who is present.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can use invented spelling to write a sentence and edit the sentence to ensure that it makes sense, begins with a capital letter, and ends with a period or question mark, whichever is most appropriate.</p> <p><i>Note: Each piece should be edited for all the components listed.</i></p> <p>F2. Student appropriately adapts language to setting or who is present.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can edit work he/she has written to ensure that it contains complete sentences, some pronouns and/or adjectives (when appropriate to the content of the writing), correct spelling of frequently used words from K-2 lists, capitalization at the beginning of a sentence and the beginning of proper nouns, and few errors in end stop punctuation (e.g., periods, question marks).</p> <p><i>Note: Each piece should be edited for all the components listed.</i></p> <p>F2. Student appropriately adapts language to setting and who is present.</p>	<p>Students will be able to:</p> <p>F1. Edit their own work for standard English spelling and usage, as evidenced by pieces that show and contain: complete sentences; initial understanding of the use of pronouns and adjectives; evidence of correct spelling of frequently used words; few significant errors in the capitalization of proper nouns and of the words that begin sentences; few significant errors in the use of end stop punctuation (e.g., periods, question marks).</p> <p>F2. Use oral language appropriate to the level of formality required.</p>

ELA Content Standard F - Standard English Conventions

PAAP Rubric Level 2

Students will write and speak correctly, using conventions of standard written and spoken English.

Performance Level 1 <i>Writing Format Level 2 or above*</i>	Performance Level 2 <i>Writing Format Level 2 or above*</i>	Performance Level 3 <i>Writing Format Level 3 or above*</i>	Performance Level 4 <i>Writing Format Level 4*</i>	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>F1. Student can edit written work for standard English spelling and usage, evidenced by pieces that show and contain:</p> <ul style="list-style-type: none"> • few enough spelling errors in frequently used words so that there is no interference with understanding of the piece. • no significant errors in the capitalization of words that begin sentences and few significant errors in the capitalization of proper nouns. • no significant errors in the use of ending punctuation marks. <p><i>Note: Each piece should be edited for all the components listed.</i></p> <p>F2. Student uses the level of language required in a given situation when the appropriate level of formality has been previously rehearsed.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can edit written work for standard English spelling and usage, evidenced by pieces that show and contain:</p> <ul style="list-style-type: none"> • few enough spelling errors In frequently used words so that there is no interference with understanding of the piece. • no significant errors in the capitalization of words that begin sentences and few significant errors in the capitalization of proper nouns and titles. • no significant errors in the use of ending punctuation marks and an understanding of how to use commas. <p><i>Note: Each piece should be edited for all the components listed.</i></p> <p>F2. Student can use the level of language required in two situations where different levels of formality are appropriate, with rehearsal.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can edit written work for standard English spelling and usage, evidenced by pieces that show and contain:</p> <ul style="list-style-type: none"> • few significant errors in the spelling of frequently used words. • no significant errors in the capitalization of words that begin sentences and few significant errors in the capitalization of proper nouns and titles. • no significant errors in the use of ending punctuation marks and an understanding of how to use commas. • few significant errors in the use of pronouns and adjectives. <p><i>Note: Each piece should be edited for all the components listed.</i></p> <p>F2. Student can use the level of language required in two situations where different levels of formality are appropriate, with no rehearsal.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can edit written work for standard English spelling and usage, evidenced by pieces that show and contain:</p> <ul style="list-style-type: none"> • few significant errors in the spelling of frequently used words. • no significant errors in the capitalization of words that begin sentences and few significant errors in the capitalization of proper nouns and titles. • no significant errors in the use of ending punctuation marks and an understanding of how to use commas. • few significant errors in the use of pronouns and adjectives. • attention to the proper use of adverbial forms and conjunctions. <p><i>Note: Each piece should be edited for all the components listed.</i></p> <p>F2. Student uses the level of language formality required in three situations where different levels of formality are appropriate, with no rehearsal.</p>	<p>Students will be able to:</p> <p>F1. Edit written work for standard English spelling and usage, evidenced by pieces that show and contain: few significant errors in the use of pronouns and adjectives; attention to the proper use of adverbial forms and conjunctions; few significant errors in the spelling of frequently used words; no significant errors in the capitalization of words that begin sentences and few significant errors in the capitalization of proper nouns and titles; no significant errors in the use of ending punctuation marks and an understanding of how to use commas.</p> <p>F2. Use the level of language formality required in a variety of speaking situations.</p>

**See definitions of Format Levels in the “Developmental Characteristics of Writing” on page ELA 14.*

ELA Content Standard G – Stylistic and Rhetorical Aspects of Writing and Speaking PAAP Rubric Level 1

Students will use stylistic and rhetorical aspects of writing and speaking to explore ideas, to present lines of thought, to represent and reflect on human experience, and to communicate feelings, knowledge, and opinions.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio contains evidence that: G1. Student can put two or more pictures, symbols, or words in sequence to tell a story, relate an event, or express an idea.	Portfolio contains evidence that: G1. Student can dictate or write two or more sentences that convey a basic idea .	Portfolio contains evidence that: G1. Student can dictate or write stories or essays that convey a basic idea with a sensible sequence .	Portfolio contains evidence that: G1. Student can dictate or write stories or essays that convey basic ideas , have sequences that make sense , and have a beginning, middle and end .	Students will be able to: G1. Dictate or write stories or essays which convey basic ideas, have sequences that make sense, and show evidence of a beginning, middle, and ending.

ELA Content Standard G – Stylistic and Rhetorical Aspects of Writing and Speaking PAAP Rubric Level 2

Students will use stylistic and rhetorical aspects of writing and speaking to explore ideas, to present lines of thought, to represent and reflect on human experience, and to communicate feelings, knowledge, and opinions.

Performance Level 1 <i>Writing Format Level 2 or above*</i>	Performance Level 2 <i>Writing Format Level 2 or above*</i>	Performance Level 3 <i>Writing Format Level 3 or above*</i>	Performance Level 4 <i>Writing Format Level 4*</i>	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>G1. Student uses descriptive language in remarks to describe objects, people, events, etc.</p> <p>G2. Pieces written by the student contain sentences that are all connected to the same topic/idea.</p> <p>G3. Written pieces or spoken remarks communicate one clear central idea.</p> <p>G4. Written pieces match one intended audience or intended purpose.</p> <p>G5. Student can identify three purposes for communications.</p> <p>G6. Student can demonstrate/identify two physical gestures that he/she has seen speakers use in presentations.</p> <p>G7. Student uses media or technological resources to communicate a series of connected ideas.</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student uses descriptive language in remarks to clarify, enhance, or develop ideas.</p> <p>G2. Pieces written by the student contain sentences organized in logical sequence.</p> <p>G3. Written essays and/or spoken remarks state or suggest a central idea with one supporting detail.</p> <p>G4. Written pieces match two intended audiences <u>or</u> intended purposes.</p> <p>G5. Student can explain/demonstrate a purpose for spoken communication.</p> <p>G6. Student demonstrates understanding of how speakers use physical gestures and eye contact in their presentations.</p> <p>G7. Student uses either one form of media or a technological resource to make a creative or expository oral presentation.</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student uses descriptive language in written pieces or organized remarks to describe objects, people, and events.</p> <p>G2. Pieces written by the student have two of the following: 1) a definite beginning (introduction) 2) a definite middle (body) 3) a definite ending (conclusion).</p> <p>G3. Written essays and/or spoken remarks state or suggest a central idea with two supporting details.</p> <p>G4. Written pieces match two intended audiences <u>and</u> intended purposes.</p> <p>G5. Student can explain/demonstrate two purposes for spoken communication.</p> <p>G6. Student demonstrates understanding of how speakers use physical gestures and eye contact, and attempts to use them in his/her own presentations.</p> <p>G7. Student uses one form of media and a technological resource to make one or more creative or expository oral presentations.</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student uses descriptive language in written pieces or organized remarks to clarify, enhance, or develop ideas.</p> <p>G2. Pieces written by the student have a definite beginning (introduction), middle (body), <u>and</u> ending (conclusion).</p> <p>G3. Written essays and/or spoken remarks clearly state or suggest a central idea with three or more supporting details.</p> <p>G4. Written pieces match three intended audiences and identifiable purposes.</p> <p>G5. Student can explain/demonstrate three purposes for spoken communication.</p> <p>G6. Student demonstrates understanding of how speakers use physical gestures and eye contact, and regularly uses them in his/her own presentations.</p> <p>G7. Student uses two or more forms of media and two or more technological resources to make creative and expository oral presentations.</p>	<p>Students will be able to:</p> <p>G1. Write pieces and make remarks that begin to use descriptive language that clarifies, enhances, and develops ideas.</p> <p>G2. Write stories (or other pieces) that show a definite beginning (introduction), middle (body), and ending (conclusion).</p> <p>G3. Write essays and make remarks that clearly state or suggest a central idea and provide supporting detail.</p> <p>G4. Write pieces that show awareness of a variety of intended audiences and identifiable purposes.</p> <p>G5. Explain the various purposes of spoken communication.</p> <p>G6. Explain how speakers use physical gestures and eye contact and use this knowledge in their own presentations.</p> <p>G7. Use a variety of media and technological resources to make creative and expository oral presentations.</p>

**See definitions of Format Levels in the “Developmental Characteristics of Writing” on page ELA 14.*

Developmental Characteristics of Reading



Format Level K

- clear, simple pictures
- consistent, predictable text, which is matched to the picture
- familiar content, related to life experiences (e.g., balls, animals, routines)
- print language is close match to oral language child uses



Format Level 1

- pictures with more detail, but still related to text
- up to 3 simple sentences per page
- printed material of interest to student
- some books have dialogue and descriptive sentences



Format Level 2

- less picture support, text moves to different places on book
- whole page of text appears – at least half the book
- sentences are more complex, including adjectives, adverbs, simple conjunctions, compound sentences
- text provides more information than pictures
- more reliance on decoding and context clues than picture clues



Format Level 3

- texts with many lines of print
- books organized into chapters (including series books with shared characters, settings, and events)
- harder picture books
- wide variety of genres
- complex sentences, dialogues



Format Level 4

- texts with many lines of print
- wide variety of long and short texts
- wide variety of genres with range of purposes
- complex sentences, dialogues

Developmental Characteristics of Writing



Format Level K

- aware that speech can be written down
- English organized from left to right
- print language is close match to oral language child uses
- combination of letters and words (semi-phonetic spellings with some sounds represented by letters) used as experiments in writing
- attempts familiar forms of writing (ex., lists, letters, stories)
- reads back own writing



Format Level 1

- has a sense of sentence
- uses basic sentence structures
- uses invented spelling by writing the sounds heard in words, and often picks letters having those sounds in their names
- attempts use of punctuation and capitalization
- written thoughts may be random



Format Level 2

- uses some variety of complete sentence structures
- uses combination of conventional spelling (words from K-2 lists) and invented spelling (common patterns are used to spell single syllable words (e.g., “quick” spelled “quice”))
- uses appropriate capitalization at beginning of sentence and for proper nouns
- generally uses appropriate end punctuation
- uses some adjectives
- writing conveys basic ideas
- related multiple sentences to single topic
- uses logical sequence (beginning, middle, and end)



Format Level 3

- uses varied sentence structures
- uses conventional spelling with few errors in frequently used words
- makes no significant errors in capitalization of words at the beginning of sentences, and few significant errors in the capitalization of proper nouns and titles
- uses appropriate end punctuation, and commas in a list
- uses pronouns and adjectives
- begins to organize writing by paragraph
- uses varied test forms to suit purpose



Format Level 4

- uses varied sentence structures
- uses conventional spelling with few errors in frequently used words
- makes no significant errors in capitalization of words at the beginning of sentences, and few significant errors in the capitalization of proper nouns and titles
- uses end punctuation and commas appropriately
- uses descriptive language to clarify, enhance, or develop ideas
- writes topic sentences and includes relevant information to develop a cohesive paragraph
- organizes paragraphs logically
- organizes pieces in a logical sequence with a beginning, middle, and end
- matches writing to purpose and audience
- uses adverbial forms and conjunctions appropriately



ELA Content Standard A - Process of Reading

PAAP Rubric Level 3

Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read.

~~ NOTE: Level of text complexity must be equivalent with Maine *Learning Result's* grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the ability to use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 3. The student displays limited understanding with judgments that appear superficial and emotional.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 3. The student displays marginal understanding with judgments that are not well supported.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the ability to use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 3. The student displays thoughtful and plausible interpretations of text with judgments that are appropriately supported from text and personal experience.</p> <p>The PAAP contains evidence that the student has met the standards for the Process of Reading at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Formulate questions to be answered while reading. 2. Reflect on what has been discovered and learned while reading, and formulate additional questions. 3. Identify specific devices an author uses to involve readers. 4. Use specific strategies (e.g., rereading, consultation) to clear up confusing parts of a text. 5. Understand stories and expository texts from the perspective of the social and cultural context in which they were created. 6. Identify accurately both the author's purpose and the author's point of view. 7. Summarize whole texts by selecting and summarizing important and representative passages. 8. Read for a wide variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). 9. Explain orally and defend opinions formed while reading and viewing. 10. Adjust viewing and listening strategies in order to comprehend materials viewed and heard. 11. Generate and evaluate the notes they have taken from course-related reading, listening, and viewing.

ELA Content Standard A - Process of Reading

PAAP Rubric Level 4

Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the ability to use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 4. The student displays limited understanding with judgments that appear superficial and emotional.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 4. The student displays marginal understanding with judgments that are not well supported.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the ability to use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what is read, as described in PAAP Rubric Level 4. The student displays thoughtful and plausible interpretations of text with judgments that are appropriately supported from text and personal experience.</p> <p>The PAAP contains evidence that the student has met the standards for the Process of Reading at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Demonstrate an understanding that reading is a gradual process of constructing meaning and revising s. 2. Demonstrate an understanding that a single text will elicit a wide variety of responses, each of which may be the point of view of the individual reader or listener. 3. Identify the author's purpose and analyze the effects of that purpose on the text. 4. Identify the author's point of view and analyze the effects of that point of view on the text. 5. Identify the devices an author uses to persuade readers and critique the effectiveness of the use of those devices. 6. Use the context of a work to determine the figurative, idiomatic, and technical meanings of terms. 7. Use the context of a work to determine the meanings of abbreviations and acronyms.

ELA Content Standard B - Literature and Culture

PAAP Rubric Level 3

Students will use reading, listening, and viewing strategies to experience, understand, and appreciate literature and culture.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the knowledge, skills and strategies related to Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills, and strategies related to Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the knowledge, skills, and strategies related to Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Literature and Culture at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Demonstrate an understanding that people respond to literature in different and individual ways. 2. Identify specific interests and questions and pursue them by identifying pertinent literature and media. 3. Identify the main and subordinate characters in literary works. 4. Explain how the motives of characters or the causes of complex events in texts are similar to and distinct from those in their own experience. 5. Demonstrate an understanding of lengthy, complex dialogues and how they relate to a story. 6. Recognize the use of specific literary devices (e.g., foreshadowing, flashback, different time frames such as the future or the past). 7. Recognize complex elements of plot (e.g., setting, major events, problems, conflicts, resolutions). 8. Apply effective strategies to the reading and interpretation of fiction (e.g., science fiction, myths, mysteries, realistic and historical fiction, poems, adventure stories, and humorous tales), using texts that are appropriately complex in terms of character, plot, theme, structure, and dialogue and appropriately sophisticated in style, point of view, and use of literary devices. 9. Apply effective strategies to the reading and use of moderately long nonfiction texts (e.g., reference sources, articles, editorials, histories, biographies, autobiographies, diaries, letters, and commentaries) which have an appropriate complexity of content and sophistication of style. 10. Demonstrate an understanding of the defining features and structure of literary texts encountered at this level. 11. Read literature and view films which illustrate distinct cultures in various types of works and formulate and defend opinions gathered from the experience. 12. Identify the universality of themes and examine the connections among various expressive forms (e.g., films, fiction, drama) by drawing on their broad base of prior knowledge. 13. Demonstrate understanding of enduring themes of literature by differentiating between main ideas and themes after they study story elements.

ELA Content Standard B - Literature and Culture

PAAP Rubric Level 4

Students will use reading, listening, and viewing strategies to experience, understand, and appreciate literature and culture.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the knowledge, skills, and strategies related to Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills, and strategies related to Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for English Language Arts, Content Standard B, Literature and Culture, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Literature and Culture at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> Distinguish between the purpose of a literary work and the personal response of an individual reader. Identify the simple and complex actions and interactions involving main and subordinate characters in a work. Make abstract connections (e.g., connections about thoughts, ideas, values) between their own lives and the characters, events, and circumstances represented in various works. Demonstrate an understanding of the stylistic effect of dialogues on the style of a work. Identify and analyze the details and effects of complex literary devices on the overall quality of a work (e.g., foreshadowing, flashbacks, time frames in the future or past). Identify and analyze how complex elements of plot (e.g., setting, major events, problems, conflicts, resolutions) effect the overall quality of the work. Apply mature strategies to the reading and interpretation of lengthy adult level fiction (e.g., satires, parodies, plays, poems, novels) using texts that are complex in terms of character, plot, theme, structure, and dialogue and sophisticated in style, point of view, and use of literary devices. Apply mature strategies to the reading and interpretation of lengthy adult level nonfiction texts with appropriate complexity of content and sophistication of style. Demonstrate an understanding of the defining features and structure of literary texts encountered at this level. Draw from a broad base of knowledge about literature of the United States and the world to examine and critique how print and visual texts explore the human experience and condition. Examine, evaluate, and elaborate on universal themes in literature, using reading and viewing to explain how themes are developed and achieved.

ELA Content Standard D – Informational Texts**PAAP Rubric Level 3**

Students will apply reading, listening, and viewing strategies to informational texts across all areas of the curriculum.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge skills and strategies related to Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Informational Texts at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none">1. Seek appropriate assistance when to comprehend challenging text.2. Identify useful information organizing strategies.3. Identify both the author's purpose and the author's point of view when reading expository information.4. Identify different ways in which informational texts are organized.5. Produce and support generalizations acquired from informational text.6. Describe new knowledge presented in informational texts and how it can be used.7. Identify common technical terms used in informational texts.8. Use the various parts of a text (index, table of contents, glossary) to locate specific information.

ELA Content Standard D – Informational Texts**PAAP Rubric Level 4**

Students will apply reading, listening, and viewing strategies to informational texts across all areas of the curriculum.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the knowledge, skills and strategies of Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills, and strategies related to Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the knowledge, skills, and strategies related to Performance Indicators for English Language Arts, Content Standard D, Informational Texts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Informational Texts at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none">1. Scan a passage to determine whether a text contains relevant information.2. Distinguish between apparent fact and opinion in nonfiction texts.3. Use discussions with peers as a way of understanding information.4. Identify complex structures in informational texts and the relationships between the concepts and details in those structures using texts from various disciplines.5. Analyze and synthesize the concepts and details in informational texts.6. Explain how new information from a text changes personal knowledge.

ELA Content Standard F - Standard English Conventions

PAAP Rubric Level 3

Students will write and speak correctly, using conventions of standard written and spoken English.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the skills and knowledge needed to write correctly using the conventions of standard English at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic skills and knowledge needed to write correctly using the conventions of standard English at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the skills and knowledge needed to write correctly using the conventions of standard English correctly at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has developed the skills and knowledge needed to consistently write correctly using the conventions of standard English at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Standard English Conventions at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> Edit written work for standard English spelling and usage, evidenced by pieces that show and contain: <ul style="list-style-type: none"> no significant errors in the use of nouns, pronouns, and adjectives. few significant errors in the use of adjective forms (e.g., comparative, superlative), adverbial forms, prepositions, and prepositional phrases. attention to the proper use of conjunctions no significant errors in the spelling of common, frequently used words, and attention to the correct spelling of commonly misspelled words and less common words. no significant errors in the common conventions of capitalization (e.g., proper nouns, names, titles) and attention to the less common capitalization conventions (e.g., capitalizing the names of nationalities). no significant errors in the use of ending punctuation marks, few significant errors in the common uses of commas, and attention to the proper use of the colon, semicolon, hyphen, dash, apostrophe, and quotation marks. attention to the correct use of commonly confused terms (e.g., affect and effect). attention to the proper use of italics, marginal notes, and footnotes. Demonstrate command of the conventions necessary to make a formal speech or presentation, effectively engaging peers and fielding responses.

ELA Content Standard F - Standard English Conventions

PAAP Rubric Level 4

Students will write and speak correctly, using conventions of standard written and spoken English.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the skills and knowledge needed to write correctly using the conventions of standard English at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic skills and knowledge needed to write correctly using the conventions of standard English at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the skills and knowledge needed to write correctly using the conventions of standard English correctly at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has developed the skills and knowledge needed to consistently write correctly using the conventions of standard English at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Standard English Conventions at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> Edit written work for standard English spelling and usage, evidenced by pieces that show and contain: <ul style="list-style-type: none"> no significant errors in the use of pronouns, nouns, adjectival and adverbial forms. coordinating and subordinating conjunctions. no significant errors in spelling of frequently used words and the correct use of commonly confused terms. no significant errors in the common conventions of capitalization and ending punctuation marks and common uses of the comma. few significant errors in the spelling of commonly misspelled and rare words, the less common capitalization conventions, the colon, semicolon, hyphen, dash, apostrophe, quotation marks, italics, marginal notes, and footnotes. Demonstrate how language usage may depend on the situation. Demonstrate command of the conventions involved in a formal speech, effectively engaging peers during presentation and fielding responses afterwards.

ELA Content Standard G - Stylistic Aspects of Writing

PAAP Rubric Level 3

Students will write and speak correctly, using conventions of standard written and spoken English.

~~ Note: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the skills and knowledge needed to use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays little or no topic/idea development, organization, and/or detail. Little awareness of audience and task is evident.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic skills and knowledge needed to use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays some topic/idea development and organization with some supporting details and simplistic language.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the skills and knowledge needed to use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays partial topic/idea development, organization, detail, and use of language.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has developed the skills and knowledge needed to consistently use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays sufficient topic/idea development and organization, with appropriate details and use of language.</p> <p>The PAAP contains evidence that the student has met the standards for Stylistic Aspects of Writing at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Write stories with an identifiable beginning, middle, and ending. 2. Write stories that include major events, develop settings, and deal with problems and solutions. 3. Write pieces and deliver oral presentations that use structures appropriate to audience and purpose. 4. Write essays and deliver oral presentations which identify a clear topic and reliably support that topic. 5. Write for both public and private audiences. 6. Write pieces and deliver oral presentations that achieve distinct purposes (e.g., to summarize, to narrate, to inform, to explain). 7. Write pieces and make remarks that use descriptive language to clarify, enhance, and develop ideas. 8. Write pieces and deliver oral presentations that include a variety of sentence structures appropriate to the purpose. 9. Write pieces that use a variety of transitional devices (i.e., phrases, sentences, paragraph). 10. Deliver oral presentations that use a variety of strategies of address (eye contact, hand gestures, modulations, changes of rhythm).

ELA Content Standard G - Stylistic Aspects of Writing

PAAP Rubric Level 4

Students will write and speak correctly, using conventions of standard written and spoken English.

~~ NOTE: Level of text complexity must be equivalent with the Maine Learning Result's grade span on which this PAAP Rubric is based. ~~

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the skills and knowledge needed to use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays little or no topic/idea development, organization, and/or detail. Little awareness of audience and task is evident.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic skills and knowledge needed to use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays some topic/idea development and organization with some supporting details and simplistic language.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the skills and knowledge needed to use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays partial topic/idea development, organization, detail, and use of language.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has developed the skills and knowledge needed to consistently use stylistic aspects of writing to explore ideas, represent and reflect on human experience, and communicate feelings, knowledge, and opinions at PAAP Rubric Level 3. The student displays sufficient topic/idea development and organization, with appropriate details and use of language.</p> <p>The PAAP contains evidence that the student has met the standards for Stylistic Aspects of Writing at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Write stories that effectively develop such elements as setting, major events, problems and solutions. 2. Write pieces and deliver oral presentations that effectively use descriptive language to clarify, enhance, and develop ideas. 3. Write pieces and deliver oral presentations that include a variety of sentence structures and lengths. 4. Write pieces and deliver oral presentations that are targeted for various audiences (e.g., informed or uninformed, sympathetic or hostile). 5. Write pieces and deliver oral presentations that achieve distinct purposes (e.g., to persuade, evaluate, analyze, defend). 6. Write pieces and deliver oral presentations that effectively employ explicit transitional devices in order to change a situation or to move the reader/listener through the piece. 7. Write pieces and deliver oral presentations in which the organization of the work follows from the purpose. 8. Write pieces and deliver oral presentations in a personal style, with a discernible voice and effective wording. 9. Write essays and deliver oral presentations that reliably support and provide details for the explicitly stated generalizations. 10. Make effective use of a variety of techniques to provide supporting detail (e.g., analogies, anecdotes, illustrations, detailed descriptions, restatements, paraphrases, examples, comparisons) in written work and oral presentations. 11. Make effective use of a variety of techniques for introducing and representing ideas and insights in written work and oral presentations.

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Maine Educational Assessment

PAAP

Personalized Alternate
Assessment Portfolio

Mathematics

Rubric Levels 1-4

based on the Maine *Learning Results*

Mathematics Content Standard A - Numbers and Number Sense

PAAP Rubric Level 1

Students will understand and demonstrate a sense of what numbers mean and how they are used.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>A1. Student can identify, locate, match, or copy a model set of 2 to 5 objects.</p> <p>A2. Student can identify one real-life purpose of numbers (e.g., prices, recipes, measurement, games, directions in play).</p> <p>A3. Student can do one of the following:</p> <ul style="list-style-type: none"> • identify a set that matches a given set. • rote count to 10. • make a set that matches a given set • given two objects of different sizes, identify the one that is bigger/smaller • Identify or copy a group of 2-5 objects when given a group of 2-5 objects. 	<p>Portfolio contains evidence that:</p> <p>A1. Student can identify, locate, match, or copy a model set of 6 to 10 objects.</p> <p>A2. Student can identify two or more real-life purposes of numbers (e.g., prices, recipes, measurement, games, directions in play).</p> <p>A3. Student can do one of the following:</p> <ul style="list-style-type: none"> • identify a number to 10 when presented with the numeral. • rote count to 20. • order numbers 1-5. • make and count groups of 10. • given two sets with up to five members, identify which has more/is bigger. • match written or oral numerals to a given set of objects with up to 10 members. • with or without objects, identify the number of tens in a given number. 	<p>Portfolio contains evidence that:</p> <p>A1. Student can match written or oral numerals to a given set of 5 to 9 objects.</p> <p>A2. Student can use numbers for two real-life purposes (e.g., prices, recipes, measurement, games, directions in play).</p> <p>A3. Student can do one of the following:</p> <ul style="list-style-type: none"> • identify a number to 100 when presented with the numeral. • rote count to 100. • order numbers 1-20. • make and count groups of two, five, and ten (up to 100). • given three sets with up to twenty members, identify which has most/the biggest/the smallest. • match written or oral numerals to a given set of objects (more than 10). • with or without objects, student can identify the number of tens in a given number up to 100. 	<p>Portfolio contains evidence that:</p> <p>A1. Student can match written or oral numerals to a given set of 10 to 20 objects.</p> <p>A2. Student can use numbers for three real-life purposes (e.g., prices, recipes, measurement, games, directions in play).</p> <p>A3. Student can do one of the following:</p> <ul style="list-style-type: none"> • identify a number to 1000 when presented with the numeral. • rote count from 900 to 1000. • order numbers over 20-1000. • make and count groups of two, five, and ten (to get to totals of 100 to 1000). • given more than three sets with up to twenty members, identify the biggest and smallest. • match written numerals to a given set of objects (more than 15). • with or without objects, identify the number of tens in a given number up to 1000. 	<p>Students will be able to:</p> <p>A1. Demonstrate an understanding of what numbers mean (e.g., that the number 7 stands for a group of objects).</p> <p>A2. Understand the many uses of numbers (e.g., prices, recipes, measurement, directions in play).</p> <p>A3. Order, compare, read, group, and apply place value concepts to numbers up to 1,000.</p>

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Mathematics Content Standard A - Numbers and Number Sense (*continued*)

PAAP Rubric Level 1

Students will understand and demonstrate a sense of what numbers mean and how they are used.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>A4. Given a mathematical statement or question related to quantities up to five, the student can indicate whether or not the statement is correct or answer the question (ex., activity demonstrating one-to-one correspondence such as: <i>Give the student a set of pencils. Ask the student to give a pencil to each member of a group. Before the student passes out the pencils, have him/her indicate whether there are enough pencils to go around.</i>)</p>	<p>Portfolio contains evidence that:</p> <p>A4. Given real-life math problems involving quantities up to ten with their solutions, the student can correctly determine whether given solutions are reasonable or not (ex. Student responds "yes" or "no" to a question about the reasonableness of a solution).</p>	<p>Portfolio contains evidence that:</p> <p>A4. Given real-life math problems, involving quantities up to 100, the student can correctly determine whether the solutions (given or created) are reasonable or not.</p>	<p>Portfolio contains evidence that:</p> <p>A4. Given real-life math problems, involving quantities up to 1000, the student can correctly determine whether the solutions (given or created) are reasonable or not.</p>	<p>Students will be able to:</p> <p>A4. Determine reasonableness of results when working with quantities.</p>

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Mathematics Content Standard A - Numbers and Number Sense

PAAP Rubric Level 2

Students will understand and demonstrate a sense of what numbers mean and how they are used.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>A1. Student can read (identify) whole numbers up to ten thousand.</p> <p>A2. Student can read (identify) $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{6}$ and match them to appropriate models.</p> <p>A3. Student can find and identify decimal points in various monetary values.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can read (identify) and either compare, order, classify, or explain whole numbers up to ten thousand.</p> <p>A2. Student can read (identify) $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{6}$, and, in addition, with or without models, do one of the following: compare, order, classify or explain those fractions.</p> <p>A3. Student can demonstrate one use and/or application of decimals and integers.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can read (identify) and either compare, order, classify or explain whole numbers up to one hundred thousand.</p> <p>A2. Student can read (identify) $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{6}$, and, in addition, with or without models, do two of the following: compare, order, classify or explain those fractions.</p> <p>A3. Student can demonstrate two uses and/or applications of decimals and integers.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can read (identify), and either compare, order, classify, or explain whole numbers up to one million.</p> <p>A2. Student can read (identify) simple fractions, including $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{10}$, and at least one fraction with a numerator other than 1, and do two of the following using those fractions: compare, order, classify, explain, simple fractions through tenths, without models.</p> <p>A3. Student can demonstrate understanding of the meaning of decimals and integers through three uses and/or applications.</p>	<p>Students will be able to:</p> <p>A1. Read, compare, order, classify, and explain whole numbers up to one million.</p> <p>A2. Read, compare, order, classify, and explain simple fractions through tenths.</p> <p>A3. Demonstrate knowledge of the meaning of decimals and integers and an understanding of how they may be used.</p>

Mathematics Content Standard B – Computation and Problem Solving

PAAP Rubric Level 1

Students will understand and demonstrate computation skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>B1. Student can, given two sets of objects with up to five members each, identify one or more of the following: the larger/smaller, longer/shorter, heavier/lighter, one with more/less, hotter/colder, etc.</p> <p>B2. Student can copy or match the members of sets of objects (with two to five members) to get the total number of objects.</p> <p>B3. Student can show understanding of addition by accurately counting a set of 5 or fewer objects.</p>	<p>Portfolio will provide evidence that:</p> <p>B1. Student can, given choices, use estimation related to non-standard or standard measurement for one of the following: volume, temperature, weight, or length.</p> <p>B2. Student can, with or without manipulatives, use one strategy (ex., touch math, number line, calculator, counting of concrete objects) to solve problems involving addition and subtraction of whole numbers.</p> <p>B3. Student can show understanding of addition by combining two sets and identifying the total number of members in the resulting set.</p>	<p>Portfolio will provide evidence that:</p> <p>B1. Student can use estimation related to non-standard or standard measurement for one of the following: volume, temperature, weight, lengths, quantity, computation, or problem-solving.</p> <p>B2. Student can, with or without manipulatives, use two strategies (ex., touch math, number line, calculator, counting of concrete objects) to solve problems involving addition and subtraction of whole numbers.</p> <p>B3. Student can show understanding of addition and subtraction by choosing an appropriate strategy for each and using the numerical symbols +, -, and =.</p>	<p>Portfolio will provide evidence that:</p> <p>B1. Student can use estimation related to non-standard or standard measurement for two of the following: volume, temperature, weight, length, quantity, computation, or problem-solving.</p> <p>B2. Student can, with or without manipulatives, use three strategies to solve problems involving addition and subtraction of whole numbers.</p> <p>B3. Student can show understanding of addition and subtraction by using more than one material, three strategies, and the numerical symbols +, -, and =.</p>	<p>Students will be able to:</p> <p>B1. Use and apply estimation with quantities, measurements, computations, and problem-solving.</p> <p>B2. Use multiple strategies in solving problems involving addition and subtraction of whole numbers.</p> <p>B3. Show understanding of addition and subtraction by using a variety of materials, strategies, and symbols.</p>

**Non-standard units might be hands, foot size, string, etc.*

Students will understand and demonstrate computation skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>B1. Student can solve single step, real-life problems using addition and subtraction with whole numbers.</p> <p>B2. Student can solve problems involving addition of simple fractions with common denominators ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{6}$), with or without using concrete models (ex., pattern blocks, geoboards).</p> <p>B3. Student can, given a problem, identify an appropriate tool or technology to solve it.</p> <p>B4. Student demonstrates proficiency with addition and subtraction facts and addition algorithms when working with two 2 digit whole numbers, by using a variety of materials, strategies, and technologies.</p>	<p>Portfolio will provide evidence that:</p> <p>B1. Student can solve two step, real-life problems using addition and subtraction with whole numbers.</p> <p>B2. Student can solve real-life problems involving addition of simple fractions with common denominators ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{6}$), with or without using concrete models (ex., pattern blocks, geoboards).</p> <p>B3. Student can, given a problem, use an appropriate tool or technology to solve it.</p> <p>B4. Student demonstrates proficiency with the addition and subtraction facts and addition and subtraction algorithms, when working with up to two, 2 digit whole numbers, by using mental math and a variety of materials, strategies, and technologies.</p>	<p>Portfolio will provide evidence that:</p> <p>B1. Student can solve multi-step, real-life problems using addition and subtraction with whole numbers and single step, real-life problems using multiplication of whole numbers.</p> <p>B2. Student can solve real-life problems involving addition or subtraction of simple fractions with common denominators ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{8}$, $\frac{1}{10}$) without using concrete models (ex., pattern blocks, geoboards).</p> <p>B3. Student can, given a problem, use appropriate tools and/or technology to solve it and describe/demonstrate the problem-solving process applied.</p> <p>B4. Student demonstrates proficiency with the addition, subtraction, multiplication, and division facts and addition, subtraction, and multiplication algorithms, when working with whole numbers with two or more digits, using mental math and a variety of materials, strategies, and technologies.</p>	<p>Portfolio will provide evidence that:</p> <p>B1. Student can solve multi-step, real-life problems using all four operations with whole numbers.</p> <p>B2. Student can solve real-life problems involving addition and subtraction of simple fractions with common denominators ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{8}$, $\frac{1}{10}$), without using concrete models (ex., pattern blocks, geoboards).</p> <p>B3. Student can, given a problem, use appropriate tools and/or technology to solve it, describe/demonstrate the process applied, and defend the reasonableness of results.</p> <p>B4. Student demonstrates proficiency with the facts and algorithms of the four operations when working with whole numbers, using mental math and a variety of materials, strategies, and technologies.</p>	<p>Students will be able to:</p> <p>B1. Solve multi-step, real-life problems using the four operations with whole numbers.</p> <p>B2. Solve real-life problems involving addition and subtraction of simple fractions.</p> <p>B3. Demonstrate and explain the problem-solving process using appropriate tools and technology and defend the reasonableness of results.</p> <p>B4. Develop proficiency with the facts and algorithms of the four operations on whole numbers using mental math and a variety of materials, strategies, and technologies.</p>

Students will understand and apply concepts of data analysis.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>C1. Student can collect data for given arrangement.</p> <p>C2. Student can tally information provided.</p>	<p>Portfolio will provide evidence that:</p> <p>C1. Student can collect and arrange data.</p> <p>C2. Student can tally information gathered from immediate surroundings.</p>	<p>Portfolio will provide evidence that:</p> <p>C1. Student can solve problems by collecting, arranging, and interpreting data.</p> <p>C2. Student can tally and graph information provided.</p>	<p>Portfolio will provide evidence that:</p> <p>C1. Student can formulate and solve problems by collecting, arranging, and interpreting data.</p> <p>C2. Student can tally and graph information gathered from immediate surroundings.</p>	<p>Students will be able to:</p> <p>C1. Formulate and solve problems by collecting, arranging, and interpreting data.</p> <p>C2. Make tallies and graphs of information gathered from immediate surroundings.</p>

Mathematics Content Standard C - Data Analysis and Statistics

PAAP Rubric Level 2

Students will understand and apply concepts of data analysis.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>C1. Student can make generalizations and draw conclusions using one type of graph <u>or</u> table.</p> <p>C2. Student can read one type of data display.</p>	<p>Portfolio will provide evidence that:</p> <p>C1. Student can make generalizations and draw conclusions using two types of graph, two different tables, <u>or</u> one type of graph and one type of table.</p> <p>C2. Student can read two different types of data display.</p>	<p>Portfolio will provide evidence that:</p> <p>C1. Student can make generalizations and draw conclusions using two types of graph, <u>and</u> one type of table.</p> <p>C2. Student can read three different types of data display and interpret one type of data.</p>	<p>Portfolio will provide evidence that:</p> <p>C1. Student can make generalizations and draw conclusions using two types of graph, and two different tables.</p> <p>C2. Student can read and interpret three different types of data display.</p>	<p>Students will be able to:</p> <p>C1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.</p> <p>C2. Read and interpret displays of data.</p>

Students will understand and apply concepts of probability.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio will provide evidence that: D1. After observing a simple event/trial, student can, given choices, identify the appropriate outcome to be recorded.	Portfolio will provide evidence that: D1. Given an event (trial) with two possible outcomes, student can choose the more likely or less likely to occur.	Portfolio will provide evidence that: D1. Student can record outcomes of simple events (trials), and identify the most likely outcome based on the data recorded.	Portfolio will provide evidence that: D1. Student can, using concepts of chance, predict the outcome(s) of a simple event and check his/her prediction by recording outcomes of such an event.	Students will be able to: D1. Use concepts of chance and record outcomes of simple events.

Students will understand and apply concepts of probability.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>D1. Given an event with two possible outcomes, student can explain/demonstrate the outcomes more likely and less likely to occur.</p> <p>D2. After completing up to six trials that are recorded, the student will identify how many times each outcome occurred.</p>	<p>Portfolio will provide evidence that:</p> <p>D1. Given an event with three possible outcomes, student can explain/demonstrate outcomes more likely and less likely to occur.</p> <p>D2. After completing up to six trials that are recorded, the student will use the recorded data to estimate the least or most likely of the outcomes for a subsequent trial.</p>	<p>Portfolio will provide evidence that:</p> <p>D1. Student can explain/demonstrate the concept of chance in predicting the outcomes of given simple events.</p> <p>D2. Student can estimate probability as a fraction from a sample of observed outcomes or simulations with up to six trials.</p>	<p>Portfolio will provide evidence that:</p> <p>D1. Student can explain/demonstrate the concept of chance in predicting outcomes.</p> <p>D2. Student can estimate probability as a fraction from a sample of observed outcomes and simulations with up to six trials.</p>	<p>Students will be able to:</p> <p>D1. Explain the concept of chance in predicting outcomes.</p> <p>D2. Estimate probability from a sample of observed outcomes and simulations.</p>

Students will understand and apply concepts from geometry.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>E1. Student can identify one or more 2D shapes.</p> <p>E2. Given a choice of two 2D shapes, student can select the one that will cover a given 2D shape.</p> <p>E3. Student can match one positional word describing the relationship between two objects (e.g., over, under, beside, to the left) to given examples of that relationship.</p>	<p>Portfolio will provide evidence that:</p> <p>E1. Student can identify and model (ex., draw, cut out, sketch) two 2D shapes.</p> <p>E2. Student can combine two or more 2D shapes to cover a 2D shape.</p> <p>E3. Student can match two or more positional words describing the relationship among two or more objects (e.g., over, under, beside, to the left) to given examples of those relationships.</p>	<p>Portfolio will provide evidence that:</p> <p>E1. Student can identify, describe or model (ex., draw, cut out, sketch), and classify three 2D shapes.</p> <p>E2. Student can demonstrate and predict the results of combining and dividing, or changing 2D shapes.</p> <p>E3. Student can use three positional words (e.g., over, under, beside, to the left) to describe the relationship among two or more objects.</p>	<p>Portfolio will provide evidence that:</p> <p>E1. Student can describe or model (ex., draw, cut out, sketch), and classify three 2D shapes and describe or model (ex., (construct, build, create, illustrate) one 3D figure.</p> <p>E2. Student can demonstrate and predict the results of combining, dividing, and changing 2D shapes.</p> <p>E3. Student can use four or more positional words to describe the relationship (e.g., over, under, beside, to the left) of two or more objects.</p>	<p>Students will be able to:</p> <p>E1. Describe, model, and classify 2D shapes and selected 3D figures.</p> <p>E2. Investigate and predict the results of combining, dividing, and changing 2D shapes.</p> <p>E3. Use positional words to describe the relationship of two or more objects (e.g., over, under, beside, to the left).</p>

Students will understand and apply concepts from geometry.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>E1. Student can classify 2D shapes and 3D figures using applicable properties.</p> <p>E2. Through experimentation, student can match congruent shapes among a set of four shapes.</p> <p>E3. Student can identify transformations such as slides or flips.</p> <p>E4. Student can identify three different shapes and figures in the physical world.</p>	<p>Portfolio will provide evidence that:</p> <p>E1. Student can classify and model 2D shapes and 3D figures using applicable properties.</p> <p>E2. Through experimentation student can identify congruent shapes and lines of symmetry.</p> <p>E3. Student can use transformations such as slides and flips.</p> <p>E4. Student can identify five different shapes and figures in the physical world.</p>	<p>Portfolio will provide evidence that:</p> <p>E1. Student can describe, model, and classify 2D shapes and figures; and, classify and model 3D figures, using applicable properties.</p> <p>E2. Through experimentation, student can identify and model congruent shapes and lines of symmetry.</p> <p>E3. Student can use transformations such as slides, flips, and rotations with three shapes.</p> <p>E4. Student can use the properties of shapes and figures to describe three aspects of the physical world.</p>	<p>Portfolio will provide evidence that:</p> <p>E1. Student can describe, model, and classify 2D and 3D shapes and figures using applicable properties.</p> <p>E2. Through experimentation with shapes and figures, student can make generalizations regarding congruency, symmetry, and similarity.</p> <p>E3. Student can use transformations such as slides, flips, and rotations with four or more shapes.</p> <p>E4. Student can use the properties of shapes and figures to describe four aspects of the physical world.</p>	<p>Students will be able to:</p> <p>E1. Describe, model, and classify shapes and figures using applicable properties.</p> <p>E2. Experiment with shapes and figures to make generalizations regarding congruency, symmetry, and similarity.</p> <p>E3. Use transformations such as slides, flips, and rotations.</p> <p>E4. Use the properties of shapes and figures to describe the physical world.</p>

Mathematics Content Standard F – Measurement

PAAP Rubric Level 1

Students will understand and demonstrate measurement skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>F1. Student can compare two items or events based on length, temperature, or weight, by identifying, for example, which is longer/shorter, hotter/colder, or heavier/lighter.</p> <p>F2. Student can match coins (penny, nickel, dime, or quarter) to the coin's picture or a coin of the same value.</p> <p>F3. Student can identify appropriate standard tools for determining one or more of the following: length, temperature, weight, time, capacity.</p>	<p>Portfolio will provide evidence that:</p> <p>F1. Student can measure (using non-standard or standard units) two of the following: length, weight, time, temperature, capacity.</p> <p>F2. Student can match coins (penny, nickel, dime, and quarter) to the coin's name, given orally or in writing.</p> <p>F3. Student can select and use appropriate standard and/or nonstandard tools for determining two of the following: length, time, temperature, weight, capacity.</p>	<p>Portfolio will provide evidence that:</p> <p>F1. Student can estimate and measure two of the following: length, weight, time, temperature, capacity.</p> <p>F2. Student can identify the penny, nickel, dime and quarter, and give the value of two of them.</p> <p>F3. Student can select and use appropriate standard and nonstandard tools for determining three of the following: length, time, temperature, weight, capacity.</p>	<p>Portfolio will provide evidence that:</p> <p>F1. Student can estimate and measure three of the following: length, temperature, weight, time, capacity.</p> <p>F2. Student can identify and give the value of the penny, nickel, dime, and quarter.</p> <p>F3. Student can select appropriate standard and nonstandard tools for determining length, temperature, weight, time, and capacity, and use two of them to solve every day problems.</p>	<p>Students will be able to:</p> <p>F1. Estimate and measure length, time, temperature, weight, and capacity.</p> <p>F2. Identify and give the value of different coins.</p> <p>F3. Select standard and non-standard tools for determining length, time, temperature, weight, and capacity, and use them to solve every day problems.</p>

**Non-standard units might be hands, foot size, string, etc.*

Students will understand and demonstrate measurement skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>F1. Student can solve real-life problems involving two of the following: the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, volume.</p> <p>F2. Student can select standard measuring tools that are appropriate for measuring five of the following: time, length, weight, temperature, area, perimeter, mass, capacity, volume.</p>	<p>Portfolio will provide evidence that:</p> <p>F1. Student can solve real-life problems involving three of the following: the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, volume.</p> <p>F2. Student can select standard measuring tools that are appropriate for measuring six of the following: time, length, weight, temperature, area, perimeter, mass, capacity, volume.</p>	<p>Portfolio will provide evidence that:</p> <p>F1. Student can solve real-life problems involving four of the following: the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, volume.</p> <p>F2. Student can select measuring tools and units of measurement that are appropriate for measuring five of the following: time, length, weight, temperature, area, perimeter, mass, capacity, volume.</p>	<p>Portfolio will provide evidence that:</p> <p>F1. Student can solve and justify solutions to real-life problems involving three of the following: the measurement time, length, area, perimeter, weight, temperature, mass, capacity, volume.</p> <p>F2. Student can select measuring tools and units of measurement that are appropriate for measuring six or more of the following: time, length, weight, temperature, area, perimeter, mass, capacity, volume.</p>	<p>Students will be able to:</p> <p>F1. Solve and justify solutions to real-life problems involving the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, and volume.</p> <p>F2. Select measuring tools and units of measurement that are appropriate for what is being measured.</p>

Mathematics Content Standard G - Patterns, Relations, Functions

PAAP Rubric Level 1

Students will understand that mathematics is the science of patterns, relationships, and functions.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>G1. Student can copy a pattern with two or more components.</p> <p>G2. Student can correctly identify two given sets as being equal or unequal.</p> <p>G3. Given two similar shapes or two numbers, student can identify the one that is bigger/smaller in the given set.</p>	<p>Portfolio will provide evidence that:</p> <p>G1. Student can recognize, copy, and extend a pattern with two or more components.</p> <p>G2. Student can select the group that is greater than, less than, or equal to, from three or more groups.</p> <p>G3. Given two similar shapes and two numbers, student can identify the one that is bigger/smaller in each set.</p>	<p>Portfolio will provide evidence that:</p> <p>G1. Student can recognize, copy, extend, and describe a wide variety of patterns with three or more components.</p> <p>G2. Student can use open sentences to describe relationships (ex., $>$, $<$, $=$).</p> <p>G3. Student can represent/model or describe three geometric or numeric relationships.</p>	<p>Portfolio will provide evidence that:</p> <p>G1. Student can recognize, copy, describe, extend, and create a wide variety of patterns with three or more components.</p> <p>G2. Student can use variables and open sentences to describe relationships (ex., $>$, $<$, $=$).</p> <p>G3. Student can represent/model or describe three relationships, some of which are geometric, and some of which are numeric.</p>	<p>Students will be able to:</p> <p>G1. Recognize, describe, extend, copy, and create a wide variety of patterns.</p> <p>G2. Explore the use of variables and open sentences to describe relationships.</p> <p>G3. Represent and describe both geometric and numeric relationships.</p>

Mathematics Content Standard G - Patterns, Relationships, Functions

PAAP Rubric Level 2

Students will understand that mathematics is the science of patterns, relationships, and functions.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>G1. Student can use patterns of numbers, geometry, and one type of graph.</p> <p>G2. From four or more choices, student can select the one that matches a given situation.</p>	<p>Portfolio will provide evidence that:</p> <p>G1. Student can use patterns of numbers, geometry, and two types of graph.</p> <p>G2. Student can correctly complete open sentences.</p>	<p>Portfolio will provide evidence that:</p> <p>G1. Student can create patterns of numbers, geometry, and a type of graph.</p> <p>G2. Student can use open sentences to express relationships.</p>	<p>Portfolio will provide evidence that:</p> <p>G1. Student can use patterns of numbers, geometry, and two types of graphs to solve problems.</p> <p>G2. Student can use variables and open sentences to express relationships.</p>	<p>Students will be able to:</p> <p>G1. Use the patterns of numbers, geometry, and a variety of graphs to solve a problem.</p> <p>G2. Use variables and open sentences to express relationships.</p>

Students will understand and apply algebraic concepts.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>H1. Student can select from two choices, the model/picture that accurately represents the answer to a problem situation or mathematical expression (ex., choose picture representing the number of people in your family from two given choices).</p> <p>H2. Given a choice of two mathematical expressions (ex., <i>add</i> - combine two sets of objects; <i>bigger</i> - identify bigger item of two given), student can select the one that correctly describes the relationship.</p>	<p>Portfolio will provide evidence that:</p> <p>H1. Student can draw, act out, or otherwise model two problem situations in which there is an unknown, incorporating a choice of tools or approaches.</p> <p>H2. Student can use concrete materials to express numerical and other relationships. EXAMPLE • Using unifix cubes to show how $2 + 4$ and $4 + 2$ will equal 6.</p>	<p>Portfolio will provide evidence that:</p> <p>H1. Student can draw, act out, or otherwise model two problem situations in which there is an unknown, using two tools and/or approaches.</p> <p>H2. Student can use concrete materials to express numerical relationships and use numeric symbols to represent sums and differences.</p>	<p>Portfolio will provide evidence that:</p> <p>H1. Student can draw, act out, or otherwise model three problem situations and mathematical expressions, in which there is an unknown, using three tools and approaches.</p> <p>H2. Student can use language and numeric symbols to express numerical and other relationships. EXAMPLE • Show all the ways to make 10 (e.g., $2 + x = 10$, and so forth) by using blocks or other objects to demonstrate mathematical statements.</p>	<p>Students will be able to:</p> <p>H1. Make drawings for problem situations and mathematical expressions in which there is an unknown, using a variety of tools and approaches.</p> <p>H2. Use language and symbols to express numerical and other relationships.</p>

Mathematics Content Standard H - Algebra Concepts**PAAP Rubric Level 2***Students will understand and apply algebraic concepts.*

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio will provide evidence that: H1. Student can supply missing elements in simple equations. EXAMPLE $4 + 6 = \underline{\hspace{1cm}}$ H2. Student can solve for a missing addend for sums up to 10 in an equation with a variable. EXAMPLE $3 + x = 10$	Portfolio will provide evidence that: H1. Student can use (evaluate) simple given formulas in problem-solving contexts. H2. Student can solve for a missing addend for sums up to 100 in an equation with a variable. EXAMPLE $25 + x = 100$	Portfolio will provide evidence that: H1. Student can choose and use (evaluate) simple given formulas in problem solving contexts. H2. Student can find appropriate replacements for variables that make number sentences related to addition or subtraction true.	Portfolio will provide evidence that: H1. Student can develop, and use (evaluate) simple formulas in problem-solving contexts. H2. Student can find appropriate replacements for variables that make number sentences related to all of the four operations true.	Students will be able to: H1. Develop and evaluate simple formulas in problem-solving contexts. H2. Find replacements for variables that make simple number sentences true.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio will provide evidence that:</p> <p>I1. Student can sort objects in a set with five or fewer members into two groups, using one given attribute.</p> <p>I2. Given a choice of two elements, student can choose one that would be an element in an organized list for a given category.</p>	<p>Portfolio will provide evidence that:</p> <p>I1. Student can sort sets of objects with more than five members into two groups, using one attribute.</p> <p>I2. Student can identify elements of things to be in a specific organized list.</p>	<p>Portfolio will provide evidence that:</p> <p>I1. Student can classify the same set of objects with more than five members into two or more groups, two times, using a different attribute for each sort (ex., shape for first sort; color for second sort).</p> <p>I2. Student can describe how a given organized list (with six or fewer elements) was made.</p>	<p>Portfolio will provide evidence that:</p> <p>I1. Student can classify the same set of objects with more than five members into two or more groups, using two different attributes in a single sort (ex., one attribute could be square and the second attribute could be red). <i>*Some members of the original set may have neither or both attributes. They will form separate groups. Based on the attributes in the example above, a blue circle would not have either attribute, while a red square would have both attributes.</i></p> <p>I2. Student can create and use an organized list to determine possible outcomes or solve problems.</p>	<p>Students will be able to:</p> <p>I1. Classify sets of objects into two or more groups using their attributes.</p> <p>I2. Create and use an organized list to determine possible outcomes or solve problems.</p>

Mathematics Content Standard I - Discrete Mathematics

PAAP Rubric Level 2

Students will understand and apply concepts in discrete mathematics.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio will provide evidence that: I1. Student can use one of the following: organized lists, tree diagrams, Venn diagrams, networks. I2. Student can describe/ demonstrate what a mathematical solution is.	Portfolio will provide evidence that: I1. Student can use two of the following: organized lists, tree diagrams, Venn diagrams, networks. I2. Student can identify six given solutions as finite or infinite.	Portfolio will provide evidence that: I1. Student can create and use one of the following: organized lists, tree diagrams, Venn diagrams, networks. I2. Student can give three examples of infinite and/or finite solutions.	Portfolio will provide evidence that: I1. Student can create and use two of the following: organized lists, tree diagrams, Venn diagrams, networks. I2. Student can give three examples of infinite and three examples of finite solutions.	Students will be able to: I1. Create and use organized lists, tree diagrams, Venn diagrams, and networks. I2. Give examples of infinite and finite solutions.

Mathematics Content Standard J - Mathematical Reasoning

PAAP Rubric Level 1

Students will understand and apply concepts of mathematical reasoning.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that: J1. Student can, given two points of view on a particular issue, identify the one with which he/she agrees.</p> <p>J2. Student can respond accurately to directions related to a task involving mathematics.</p>	<p>Portfolio contains evidence that: J1. Presented with an argument, student can identify whether he/she agrees with it and why.</p> <p>J2. Student can identify or select the majority of mathematical information included in a set of given information.</p>	<p>Portfolio contains evidence that: J1. Student can identify facts that support an argument and facts that do not support the argument.</p> <p>J2. Student, when asked a mathematical question, can identify what information he/she needs to answer the question.</p>	<p>Portfolio contains evidence that: J1. Student can describe/demonstrate a simple argument's strengths and weaknesses.</p> <p>J2. Student can distinguish between "important" and "unimportant" mathematical information.</p>	<p>Students will be able to: J1. Describe a simple argument's strengths and weaknesses.</p> <p>J2. Distinguish between "important" and "unimportant" mathematical information.</p>

Mathematics Content Standard J - Mathematical Reasoning**PAAP Rubric Level 2***Students will understand and apply concepts of mathematical reasoning.*

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio contains evidence that: J1. Student can provide one type of evidence to support a claim (e.g., logical processes, measurement, observation, experimentation).	Portfolio contains evidence that: J1. Student can provide two types of evidence to support a claim (e.g., logical processes, measurement, observation, experimentation).	Portfolio contains evidence that: J1. Student can provide three types of evidence to support a claim (e.g., logical processes, measurement, observation, experimentation).	Portfolio contains evidence that: J1. Student can demonstrate understanding that support for a claim should be based on evidence of various types (e.g., from logical processes, from measurement, or from observation and experimentation).	Students will be able to: J1. Demonstrate an understanding that support for a claim should be based on evidence of various types (e.g., from logical processes, from measurement, or from observation and experimentation).

Mathematics Content Standard K - Mathematical Communication**PAAP Rubric Level 1**

Students will reflect upon and clarify their understanding of mathematical ideas and relationships.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio contains evidence that: K1. Student can use signs/symbols that communicate math concepts (ex., more, take away, same, different, etc.).	Portfolio contains evidence that: K1. Student can use numerals and/or one or more mathematical symbols (ex., $>$, $<$, $=$, $+$, $-$) to communicate.	Portfolio contains evidence that: K1. Student can use numerals <u>or</u> symbols to report numerical data.	Portfolio contains evidence that: K1. Student can use numerals <u>and</u> symbols ($>$, $<$, $=$, $+$, $-$) to report numerical data and relationships.	Students will be able to: K1. Use numerals and symbols ($>$, $<$, $=$, $+$, $-$) to report numerical data and relationships.

Content Standard K - Mathematical Communication

PAAP Rubric Level 2

Students will reflect upon and clarify their understanding of mathematical ideas and relationships.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
Portfolio contains evidence that: K1. Student can use simple tables or graphs to record information.	Portfolio contains evidence that: K1. Student can read simple tables and graphs to gain and share information.	Portfolio contains evidence that: K1. Student can use simple tables <u>or</u> graphs to record and communicate ideas and information.	Portfolio contains evidence that: K1. Student can use simple tables <u>and</u> graphs to communicate ideas and information in presentations in a concise and clear manner.	Students will be able to: K1. Use simple tables and graphs to communicate ideas and information in presentations in a concise and clear manner.

Mathematics Content Standard A - Numbers and Number Sense

PAAP Rubric Level 3

Students will understand and demonstrate a sense of what numbers mean and how they are used.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Numbers and Number Sense at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Use numbers in a variety of equivalent and interchangeable forms (e.g., integer, fraction, decimal, percent, exponential, and scientific notation) in problem-solving. 2. Demonstrate understanding of the relationships among the basic arithmetic operations on different types of numbers. 3. Apply concepts of ratios, proportions, percents, and number theory (e.g., primes, factors, and multiples) in practical and other mathematical solutions. 4. Represent numerical relationships in graphs, tables, and charts.

Mathematics Content Standard A - Numbers and Number Sense

PAAP Rubric Level 4

Students will understand and demonstrate a sense of what numbers mean and how they are used.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard A, Numbers and Number Sense, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Numbers and Number Sense at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Describe the structure of the real number system and identify its appropriate applications and limitations. 2. Explain what complex numbers (real and imaginary) mean and describe some of their many uses.

Mathematics Content Standard B - Computation and Problem Solving

PAAP Rubric Level 3

Students will understand and demonstrate computation skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the skills and strategies related to mathematical computation. The student employs inappropriate strategies and applies understandings related to the Content Standard inaccurately and/or inappropriately at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic skills and strategies related to mathematical computation. Accurate and appropriate application of related strategies and skills are used inconsistently at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the skills and strategies related to mathematical computation. The student employs appropriate strategies, but applies some computation skills inaccurately and/or inappropriately at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to mathematical computation. The student employs appropriate strategies and applies skills accurately and appropriately at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Computation and Problem Solving at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations. 2. Create, solve, and justify the solution for multi-step, real-life problems including those with ration and proportion.

Mathematics Content Standard B - Computation and Problem Solving

PAAP Rubric Level 4

Students will understand and demonstrate computation skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of the skills and strategies related to mathematical computation and problem solving. The student employs inappropriate strategies and applies understandings related to the Content Standard inaccurately and/or inappropriately at PAAP Rubric Level 4</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic skills and strategies related to mathematical computation and problem solving. Accurate and appropriate application of related strategies and skills are used inconsistently at PAAP Rubric Level 4</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the skills and strategies related to mathematical computation and problem solving. The student employs appropriate strategies, but applies some skills inaccurately and/or inappropriately at PAAP Rubric Level 4</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to mathematical computation and problem solving. The student employs appropriate strategies and applies skills accurately and appropriately at PAAP Rubric Level 4</p> <p>The PAAP contains evidence that the student has met the standards for Computation and Problem Solving at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results. 2. Explain operations with number systems other than base 10.

Mathematics Content Standard C - Data Analysis and Statistics

PAAP Rubric Level 3

Students will understand and apply concepts of data analysis.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Data Analysis and Statistics at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Organize and analyze data using mean, median, mode, and range. 2. Assemble data and use matrices to formulate and solve problems. 3. Construct inferences and convincing arguments based on data.

Mathematics Content Standard C - Data Analysis and Statistics

PAAP Rubric Level 4

Students will understand and apply concepts of data analysis.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard C, Data Analysis and Statistics, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Data Analysis and Statistics at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> Determine and evaluate the effect of variables on the results of data collection. Predict and draw conclusions from charts, tables, and graphs that summarize data from practical situations. Demonstrate an understanding of concepts of standard deviation and correlation and how they relate to data analysis. Demonstrate an understanding of the idea of random sampling and recognition of its role in statistical claims and designs for data collection. Revise studies to improve their validity (e.g., in terms of better sampling, better controls, or better data analysis techniques).

Mathematics Content Standard D - Probability

PAAP Rubric Level 3

Students will understand and apply concepts of probability.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard D, Probability, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard D, Probability, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard D, Probability, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard D, Probability, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Probability at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Find the probability of simple events and make predictions by applying the theories of probability. 2. Explain the idea that probability can be represented as a fraction between and including zero and one. 3. Use simulations to estimate probabilities. 4. Find all possible combinations and arrangements involving a limited number of variables.

Mathematics Content Standard D - Probability

PAAP Rubric Level 4

Students will understand and apply concepts of probability.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard D, Probability, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard D, Probability, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard D, Probability, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard D, Probability, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Probability at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Find the probability of compound events and make predictions by applying probability theory. 2. Create and interpret probability distributions.

Mathematics Content Standard E - Geometry

PAAP Rubric Level 3

Students will understand and apply concepts from geometry.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard E, Geometry, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard E, Geometry, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard E, Geometry, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard E, Geometry, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Geometry at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Compare, classify, and draw two dimensional shapes and three dimensional figures. 2. Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes. 3. Use a coordinate system to define and locate position. 4. Use the appropriate geometric tools and measurements to draw and construct two and three dimensional figures.

Mathematics Content Standard E - Geometry

PAAP Rubric Level 4

Students will understand and apply concepts from geometry.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard E, Geometry, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard E, Geometry, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard E, Geometry, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard E, Geometry, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Geometry at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Draw coordinate representations of geometric figures and their transformations. 2. Use inductive and deductive reasoning to explore and determine the properties of and relationships among geometric figures. 3. Apply trigonometry to problem situations involving triangles and periodic phenomena.

Mathematics Content Standard F - Measurement

PAAP Rubric Level 3

Students will understand and demonstrate measurement skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard F, Measurement, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard F, Measurement, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard F, Measurement, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard F, Measurement, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Measurement at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> Demonstrate the structure and use of systems of measurement. Develop and use concepts that can be measured directly, or indirectly (e.g., the concept of rate). Demonstrate an understanding of length, area, volume, and the corresponding units, square units, and cubic units of measure.

Mathematics Content Standard F - Measurement

PAAP Rubric Level 4

Students will understand and demonstrate measurement skills.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard F, Measurement, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard F, Measurement, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard F, Measurement, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard F, Measurement, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Measurement at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <p>4</p> <ol style="list-style-type: none"> 1. Use measurement tools and units appropriately and recognize limitations in the precision of the measurement tools. 2. Derive and use formulas for area, sue area, and volume of many types of figures.

Mathematics Content Standard G - Patterns, Relations, Functions

PAAP Rubric Level 3

Students will understand that mathematics is the science of patterns, relationships, and functions.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Patterns, Relations, Functions at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Describe and represent relationships with tables, graphs, and equations. 2. Analyze relationships to explain how a change in one quantity can result in a change in another. 3. Use patterns and multiple representations to solve problems.

Mathematics Content Standard G - Patterns, Relations, Functions

PAAP Rubric Level 4

Students will understand that mathematics is the science of patterns, relationships, and functions.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard G, Patterns, Relations, Functions, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Patterns, Relations, Functions at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Create a graph to represent a real-life situation and draw inferences from it. 2. Translate and solve a real-life problem using symbolic language. 3. Model phenomena using a variety of functions (linear, quadratic, exponential, trigonometric, etc.) 4. Identify a variety of situations explained by the same type of function.

Mathematics Content Standard H - Algebra Concepts

PAAP Rubric Level 3

Students will understand and apply algebraic concepts.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard H, Algebra Concepts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard H, Algebra Concepts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard H, Algebra Concepts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard H, Algebra Concepts, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Algebra Concepts at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Use the concepts of variables and expressions. 2. Solve linear equations using concrete, informal, and formal methods which apply the order of operations. 3. Analyze tables and graphs to identify properties and relationships in a practical content. 4. Use graphs to represent two-variable equations. 5. Demonstrate an understanding of inequalities and non-linear equations. 6. Find solutions for unknown quantities in linear equations and in simple equations and inequalities.

Mathematics Content Standard H - Algebra Concepts

PAAP Rubric Level 4

Students will understand and apply algebraic concepts.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard H, Algebra Concepts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard H, Algebra Concepts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard H, Algebra Concepts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard H, Algebra Concepts, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Algebra Concepts at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Use tables, graphs, and spreadsheets to interpret expressions, equations, and inequalities. 2. Investigate concepts of variation by using equations, graphs, and data collection. 3. Formulate and solve equations and inequalities. 4. Analyze and explain situations using symbolic representations.

Mathematics Content Standard I - Discrete Mathematics

PAAP Rubric Level 3

Students will understand and apply concepts in discrete mathematics.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard I, Discrete Mathematics, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard, I, Discrete Mathematics at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard I, Discrete Mathematics, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard I, Discrete Mathematics, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Discrete Mathematics at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Create and use networks to explain practical situations or solve problems. 2. Identify patterns in the world and express these patterns with rules.

Mathematics Content Standard I - Discrete Mathematics

PAAP Rubric Level 4

Students will understand and apply concepts in discrete mathematics.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of Performance Indicators for Mathematics Content Standard I, Discrete Mathematics, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the use of the skills and strategies of Performance Indicators for Mathematics, Content Standard, I, Discrete Mathematics at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the knowledge, skills and strategies related to Performance Indicators for Mathematics, Content Standard I, Discrete Mathematics, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently use the skills and strategies related to Performance Indicators for Mathematics, Content Standard I, Discrete Mathematics, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Discrete Mathematics at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Use linear programming to find optimal solutions to a system. 2. Use networks to find solutions to problems. 3. Apply strategies from game theory to problem-solving situations. 4. Use matrices as tools to interpret and solve problems.

Mathematics Content Standard J - Mathematical Reasoning

PAAP Rubric Level 3

Students will understand and apply concepts of mathematical reasoning.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of concepts related to Performance Indicators for Mathematics Content Standard J, Mathematical Reasoning, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the application of concepts related to Performance Indicators for Mathematics, Content Standard, J, Mathematical Reasoning at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the ability to apply concepts related to Performance Indicators for Mathematics, Content Standard J, Mathematical Reasoning, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently apply the concepts related to Performance Indicators for Mathematics, Content Standard J, Mathematical Reasoning, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Mathematical Reasoning at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> Support reasoning by using models, known facts, properties, and relationships. Demonstrate that multiple paths to a conclusion may exist.

Mathematics Content Standard J - Mathematical Reasoning

PAAP Rubric Level 4

Students will understand and apply concepts of mathematical reasoning.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of concepts related to Performance Indicators for Mathematics Content Standard J, Mathematical Reasoning, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the application of concepts related to Performance Indicators for Mathematics, Content Standard J, Mathematical Reasoning, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the ability to apply concepts related to Performance Indicators for Mathematics, Content Standard J, Mathematical Reasoning, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently apply the concepts related to Performance Indicators for Mathematics, Content Standard J, Mathematical Reasoning, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Mathematical Reasoning at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> Analyze situations where more than one logical conclusion can be drawn from data presented.

Mathematics Content Standard K - Mathematical Communication

PAAP Rubric Level 3

Students will reflect upon and clarify their understanding of mathematical ideas and relationships.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of concepts related to Performance Indicators for Mathematics Content Standard K, Mathematical Communication, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the application of concepts related to Performance Indicators for Mathematics, Content Standard K, Mathematical Communication, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the ability to apply concepts related to Performance Indicators for Mathematics, Content Standard K, Mathematical Communication, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently apply the concepts related to Performance Indicators for Mathematics, Content Standard K, Mathematical Communication, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student has met the standards for Mathematical Communication at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p>	<p><i>Students will be able to:</i></p> <p>1. Translate relationships into algebraic notation.</p>

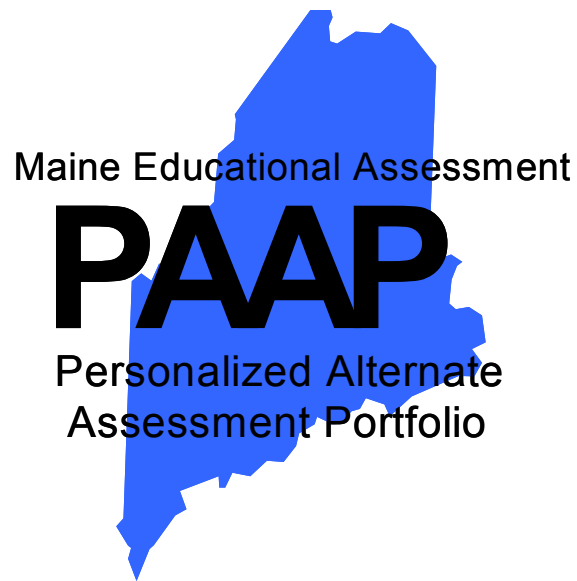
69Mathematics Content Standard K - Mathematical Communication

PAAP Rubric Level 4

Students will reflect upon and clarify their understanding of mathematical ideas and relationships.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Evidence indicates that the student is in the initial stages of development of concepts related to Performance Indicators for Mathematics Content Standard K, Mathematical Communication, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components related to this Content Standard.</p>	<p>Evidence indicates that the student has developed basic abilities in the application of concepts related to Performance Indicators for Mathematics, Content Standard K, Mathematical Communication, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p>	<p>Evidence indicates that the student has partially developed the ability to apply concepts related to Performance Indicators for Mathematics, Content Standard K, Mathematical Communication, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p>	<p>Evidence indicates that the student has the ability to consistently apply the concepts related to Performance Indicators for Mathematics, Content Standard K, Mathematical Communication, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student has met the standards for Mathematical Communication at this Rubric Level.</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> 1. Restate, create, and use definitions in mathematics to express understanding, classify figures, and determine the truth of a proposition or argument. 2. Read mathematical presentations of topics within the Learning Results with understanding.

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Science and Technology

Rubric Levels 1-4

based on the Maine *Learning Results*

Students will understand that there are similarities within the diversity of all living things.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>A1. Given a set of objects, student can sort them into two categories, living and non-living.</p> <p>A2. Student can match a living thing to one of its characteristics (ex., size, home, food, etc.)</p> <p>A3. Student can match a picture/model of a baby organism to the adult of the same organism (ex., colt/horse, human baby/human adult, seed/plant).</p> <p>A4. Given a collection of 5 or fewer objects, student can, based on one attribute, sort the objects into two or more groups.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Given a set of objects, student can sort them into two categories, living and non-living, and give a difference between living and non-living.</p> <p>A2. Student can indicate/identify one characteristic of two different living things.</p> <p>A3. Student can match pictures of at least two different stages of life to the adult stage of the living thing represented.</p> <p>A4. Given two sets of objects, student can identify the "rule" by which the objects have been sorted.</p>	<p>Portfolio contains evidence that:</p> <p>A1. After sorting objects into two categories (living and non-living), student can give two differences between living and non-living things.</p> <p>A2. Student can describe/demonstrate one characteristic of three different (plant/animal) living things.</p> <p>A3. Student can explain, draw, sequence, or otherwise demonstrate three stages in a life cycle: birth, life, and death for an organism.</p> <p>A4. Given a collection of objects, student can sort the objects into two groups and describe the "rule" by which each group was sorted.</p>	<p>Portfolio contains evidence that:</p> <p>A1. After sorting objects into two categories (living and non-living), student can give three differences between living and non-living things.</p> <p>A2. Student can describe/demonstrate two characteristics of three different (plant/animal) living things.</p> <p>A3. Student can explain, draw, or otherwise demonstrate a life cycle with more than three stages.</p> <p>A4. Given a collection of objects, student can sort them into three groups and describe the "rule" by which each group was sorted.</p>	<p>Students will be able to:</p> <p>A1. Identify the differences between living and non-living things.</p> <p>A2. Describe characteristics of different living things.</p> <p>A3. Explain, draw, or otherwise demonstrate the life cycle of an organism.</p> <p>A4. Design and describe a classification system for objects.</p>

Students will understand that there are similarities within the diversity of all living things.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>A1. Student can identify two characteristics of four organisms.</p> <p>A2. Student can classify organisms in simple terms, given categories (ex., living/non-living, plant/animal).</p> <p>A3. Student can identify two different living things within a given habitat.</p> <p>A4. Student can describe/demonstrate the structure, behavior, or life cycle of an organism.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can identify two characteristics of four given organisms and group them based on those characteristics.</p> <p>A2. Student can describe/demonstrate a classification system for organisms based on one characteristic.</p> <p>A3. Student can name three living things within a given habitat.</p> <p>A4. Student can compare and contrast the structure, behavior or life cycle of two different organisms.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can group four organisms in two different ways using different characteristics.</p> <p>A2. Student can describe/demonstrate and design a classification system for organisms based on two characteristics.</p> <p>A3. Student can explain, draw, or otherwise describe three different living things within a given habitat.</p> <p>A4. Student can compare and contrast the structure and behavior of two different organisms.</p>	<p>Portfolio contains evidence that:</p> <p>A1. Student can group four organisms in three different ways using different characteristics.</p> <p>A2. Student can describe/demonstrate and design a classification system for organisms based on three characteristics.</p> <p>A3. Student can explain, draw, or otherwise describe four different living things within a given habitat.</p> <p>A4. Student can compare and contrast the structure, behavior, and life cycles of two different organisms.</p>	<p>Students will be able to:</p> <p>A1. Group the same organisms in different ways using different characteristics.</p> <p>A2. Design and describe a classification system for organisms.</p> <p>A3. Describe the different living things within a given habitat.</p> <p>A4. Compare and contrast the life cycles, behavior, and structure of different organisms.</p>

Science & Technology Content Standard B - Ecology

PAAP Rubric Level 1

Students will understand how living things depend on one another and on non-living aspects of the environment.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>B1. Student can match a picture of an organism to one thing from the environment on which it depends (ex., Student can identify pictures of elements they need to survive).</p> <p>B2. Student can identify things that are food and things that are not food.</p> <p>B3. Student can, when asked, make a change in his/her environment (ex., turn the lights on or off, move a classroom object, change his/her position).</p> <p>B4. Student can identify objects from his her own environment ("ecological system").</p> <p>B5. Student can identify one or more objects from a familiar local environment among a given group of two or more objects.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can match a picture of an organism to two things in its environment on which it depends.</p> <p>B2. Student can match three animals to the plants on which they depend for food.</p> <p>B3. Student can draw, explain, or otherwise describe the effect(s) of one change in an environment.</p> <p>B4. From a group of pictures/objects, student can choose those that match one ecological system on earth.</p> <p>B5. Student can draw, or otherwise describe two objects from a familiar local environment.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can identify two ways in which organisms depend upon their environment.</p> <p>B2. Student can describe/demonstrate how the food of six animals can be traced back to plants.</p> <p>B3. Student can give two examples of how one change in a system affects other parts of the system.</p> <p>B4. Student can draw, explain, or otherwise describe two ecological systems on earth.</p> <p>B5. Student can draw, explain, or otherwise describe three objects from a familiar local environment.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can identify three ways in which organisms depend upon their environment.</p> <p>B2. Student can describe/demonstrate how almost all animals' food can be traced back to plants.</p> <p>B3. Student can give three examples of how one change in a system affects other parts of the system.</p> <p>B4. Student can draw, explain, or otherwise describe three ecological systems on earth.</p> <p>B5. Student can draw, explain, or otherwise describe four objects from a familiar local environment.</p>	<p>Students will be able to:</p> <p>B1. Identify ways that organisms depend upon their environment.</p> <p>B2. Describe how almost all animals' food can be traced back to plants.</p> <p>B3. Give examples of how one change in a system affects other parts of the system.</p> <p>B4. Describe different ecological systems on earth.</p> <p>B5. Describe a familiar local environment.</p>

Science & Technology Content Standard B - Ecology

PAAP Rubric Level 2

Students will understand how living things depend on one another and on non-living aspects of the environment.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>B1. Student can identify two particular organisms in a given food web.</p> <p>B2. Student can sort a given group of organisms into producers (e.g., green plants) and consumers (e.g., those that eat green plants).</p> <p>B3. Student can identify the characteristics of one biome (i.e., regions characterized by their climate and plant life - tundra, rain forest, ocean, desert).</p> <p>B4. Student can identify two major living or two non-living components of a local ecosystem after investigation.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can identify the particular organisms in a given food web and place them in an appropriate sequence to form a cycle.</p> <p>B2. Student can explain/demonstrate the difference between producers (e.g., green plants), and consumers (e.g., those that eat green plants).</p> <p>B3. Student can describe/demonstrate understanding of two different biomes (i.e., regions characterized by their climate and plant life - tundra, rain forest, ocean, desert).</p> <p>B4. Student can identify two major living and two or more non-living components of a local ecosystem after investigation.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can describe/demonstrate a food web and one relationship within a given ecosystem.</p> <p>B2. Student can explain/demonstrate the difference between producers (e.g., green plants) and consumers (e.g., those that eat green plants), and identify a decomposer (e.g., bacteria that break down the "consumers" when they die).</p> <p>B3. Student can compare and contrast two physical and two living components of different biomes (i.e., regions characterized by their climate and plant life - tundra, rain forest, ocean, desert).</p> <p>B4. Student can describe/demonstrate the connection between a major living and a non-living component of a local ecosystem after investigation.</p>	<p>Portfolio contains evidence that:</p> <p>B1. Student can describe/demonstrate a food web and the relationships within a given ecosystem.</p> <p>B2. Student can explain/demonstrate the differences among producers (e.g., green plants), consumers (e.g., those that eat green plants), and decomposers (e.g., bacteria that break down the "consumers" when they die), and identify examples of each.</p> <p>B3. Student can compare and contrast three physical and three living components of different biomes (i.e., regions characterized by their climate and plant life - tundra, rain forest, ocean, desert).</p> <p>B4. Student can describe/demonstrate connections between two major living and non-living components of a local ecosystem after investigation.</p>	<p>Students will be able to:</p> <p>B1. Describe a food web and the relationships within an ecosystem.</p> <p>B2. Explain the difference between producers (e.g., green plants), consumers (e.g., those that eat green plants), and decomposers (e.g., bacteria that break down the "consumers" when they die), and identify examples of each.</p> <p>B3. Compare and contrast physical and living components of different biomes - i.e., regions characterized by their climate and plant life - (e.g., tundra, rain forest, ocean, desert).</p> <p>B4. Investigate the connection between major living and non-living components of a local ecosystem.</p>

Students will understand that cells are the basic units of life.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>C1. Student can indicate at least two different parts of a living thing when the names of those parts and the living thing are given.</p> <p>C2. Student can match two living things to the food(s) they eat.</p> <p>C3. Student will use a magnifying device for an appropriate purpose.</p> <p>C4. Student can communicate to others when they are not feeling well or are experiencing pain.</p>	<p>Portfolio contains evidence that:</p> <p>C1. Student can indicate three different parts of two living things when the names of those parts are given.</p> <p>C2. From a group of five or fewer pictures including living and non-living things, student can identify those that need food and water to survive.</p> <p>C3. Student will use a magnifying device and match pictures of what he/she sees first with the naked eye, and what he/she sees using the magnifying device.</p> <p>C4. Student can match symptoms to two common diseases.</p>	<p>Portfolio contains evidence that:</p> <p>C1. Given a group of twelve different parts and the names of four living things, the student can match the parts to the related whole.</p> <p>C2. From a group of five or fewer pictures including animals, plants, and non-living things, student can identify those that need food, water, and gases to survive.</p> <p>C3. Student can use two types of magnifying devices and identify the difference it makes in size of the image (makes the image larger).</p> <p>C4. Student can provide an example of the cause of a disease.</p>	<p>Portfolio contains evidence that:</p> <p>C1. Student can explain or otherwise demonstrate understanding that all living things are made up of different parts.</p> <p>C2. Student can draw, explain, or otherwise demonstrate understanding of the concept that plants and animals need food, water, and gases to survive.</p> <p>C3. Student can use two types of magnifying devices and identify details that can be seen only through the magnified image.</p> <p>C4. Student can provide two examples of causes of diseases.</p>	<p>Students will be able to:</p> <p>C1. Demonstrate that living things are made up of different parts.</p> <p>C2. Demonstrate an understanding that plants and animals need food, water, and gases to survive.</p> <p>C3. Explore magnifying devices and how they allow one to see in more detail.</p> <p>C4. Provide examples of causes of diseases.</p>

Students will understand that cells are the basic units of life.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>C1. Student can match six living things to their parts.</p> <p>C2. Student can describe/demonstrate the characteristics of a single-celled organism (i.e., is one celled and is alive).</p> <p>C3. Student can describe/demonstrate the function of a microscope.</p> <p>C4. Student can identify parts of one given major human organ system when presented among parts from three or more human organ systems.</p>	<p>Portfolio contains evidence that:</p> <p>C1. Student can describe/demonstrate that living things are made up of smaller parts.</p> <p>C2. Student can list what a single celled organism needs in order to stay alive (ex., food, water, and/or gases).</p> <p>C3. Student can use a microscope to see given objects.</p> <p>C4. Student can describe/demonstrate the functions of two major human organ systems.</p>	<p>Portfolio contains evidence that:</p> <p>C1. Student can explain/demonstrate understanding that the smaller parts of living things are made up of cells.</p> <p>C2. Student can describe/demonstrate how one single-celled organism exists.</p> <p>C3. Student can use a microscope to identify a cell.</p> <p>C4. Student can describe/demonstrate the functions of three major human organ systems.</p>	<p>Portfolio contains evidence that:</p> <p>C1. Student can explain/demonstrate understanding that a cell is the basic unit of living organisms.</p> <p>C2. Student can describe/demonstrate how two single-celled organisms exist.</p> <p>C3. Student can use a microscope to see cells in a variety of organisms.</p> <p>C4. Student can describe/demonstrate the functions of four major human organ systems.</p>	<p>Students will be able to:</p> <p>C1. Demonstrate an understanding that a cell is the basic unit of living organisms.</p> <p>C2. Describe how single-celled organisms exist.</p> <p>C3. Explore how the use of a microscope allows one to see cells in a variety of organisms.</p> <p>C4. Describe the functions of the major human organ systems.</p>

Students will understand the basis for all life and that all living things change over time.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>D1. Student can match a picture or object of an organism to its corresponding fossil (e.g., fern to fern fossil).</p> <p>D2. Student can identify two organisms.</p> <p>D3. Student can match pictures of two stages in the life cycle of a given organism to the adult form of the organism (ex., tadpole/frog, seed/plant).</p> <p>D4. Student can identify one way in which humans are alike (e.g., student can identify one characteristic that he/she has in common with other people).</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can draw, explain, or otherwise demonstrate understanding that dead organisms leave remnants.</p> <p>D2. Student can match three organisms to their environments.</p> <p>D3. Student can put three stages of one life cycle in correct sequence.</p> <p>D4. Student can identify one way in which individuals of the same species, other than human, are alike.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can draw, explain, or otherwise demonstrate understanding that remains may turn into fossils.</p> <p>D2. Student can identify characteristics of three organisms.</p> <p>D3. Student can identify and draw, describe, or respond to questions in order to demonstrate understanding of three stages of one life cycle.</p> <p>D4. Student can describe/demonstrate one way in which individuals of the same species are alike, and one way in which they are different.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can draw, explain, or otherwise demonstrate understanding of how fossils show the existence of past life.</p> <p>D2. Student can identify characteristics that help three organisms live in their environment.</p> <p>D3. Student can draw, describe, or respond to questions in order to demonstrate understanding of ways in which an organism can change over its lifetime, sometimes in predictable ways (e.g., butterfly, frog).</p> <p>D4. Student can describe/demonstrate two ways in which individuals of the same species are alike and two ways in which they are different.</p>	<p>Students will be able to:</p> <p>D1. Explain how fossils show the existence of past life.</p> <p>D2. Identify characteristics that help organisms live in their environment.</p> <p>D3. Draw or describe ways in which an organism can change over its lifetime, sometimes in predictable ways (e.g., butterfly, frog).</p> <p>D4. Describe ways in which individuals of the same species are alike and different.</p>

Students will understand the basis for all life and that all living things change over time.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>D1. Student can identify three present day organisms that have not always existed.</p> <p>D2. Student can draw or otherwise demonstrate understanding of the definition of the word "fossil".</p> <p>D3. Student can identify an adaptation that helps an organism live (ex., moist frog skin for respiration).</p> <p>D4. Student can demonstrate two ways in which organisms may be similar to their parents, or two ways in which they are different from their parents.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can identify three present day organisms that have not always existed, and one organism that no longer exists.</p> <p>D2. Student can identify the environmental factors that would cause a fossil to form.</p> <p>D3. Student can describe/demonstrate how adaptations may change over time.</p> <p>D4. Student can describe/demonstrate two ways in which organisms may be similar to their parents and one way in which they may be different from their parents.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can identify three present day organisms that have not always existed, and two organisms that no longer exist.</p> <p>D2. Student can describe/demonstrate one aspect of the process of how fossils form.</p> <p>D3. Student can describe/demonstrate how adaptations, in response to change over time, increased the chances of survival for a specific species.</p> <p>D4. Student can describe/demonstrate three ways in which organisms may be similar to their parents and two ways in which they may be different from their parents.</p>	<p>Portfolio contains evidence that:</p> <p>D1. Student can identify four present day organisms that have not always existed, and three past life forms that have become extinct.</p> <p>D2. Student can describe/demonstrate how fossils form.</p> <p>D3. Student can describe/demonstrate how adaptations, in response to change over time, may increase a species' chances of survival.</p> <p>D4. Student can describe/demonstrate three ways in which organisms may be similar to their parents, three ways in which they may be different from their parents, and suggest one possible reason for this.</p>	<p>Students will be able to:</p> <p>D1. Identify present day organisms that have not always existed, and past life forms that have become extinct.</p> <p>D2. Describe how fossils form.</p> <p>D3. Explain how adaptations, in response to change over time, may increase a species' chances of survival.</p> <p>D4. Describe ways in which organisms may be similar to and different from their parents and explore the possible reasons for this.</p>

Students will understand the structure of matter and the changes it can undergo.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>E1. Student can point to two different pieces/parts belonging to an object when the names of the object and/or a group made up of related and unrelated parts are given (ex., body, car, building, animal, plant, recipe, jigsaw puzzle).</p> <p>E2. Student can identify one physical property (ex., color, size, texture) of one given object.</p> <p>E3. Given a set of two to four objects, the student can choose the one that has a specific observable characteristic (ex., "Show me the one that is red.").</p>	<p>Portfolio contains evidence that:</p> <p>E1. Student can match three pieces/parts of two given objects to the whole of which they are a part (ex., body, car, jigsaw puzzle).</p> <p>E2. Student can identify two physical properties (ex., color, size, texture) of one given objects.</p> <p>E3. Given a set of four or more objects, the student can identify all the ones that have the same specific observable characteristic (ex., "Show me all the objects that are red.").</p>	<p>Portfolio contains evidence that:</p> <p>E1. Given a group of twelve different pieces/parts and pictures/names of four different objects, the student can match the pieces to the related object.</p> <p>E2. Student can describe/demonstrate one physical property (ex., color, size, texture) of one given object.</p> <p>E3. Student can sort a set of objects based on two observable characteristics (ex., one sort based on color and a second sort based on size).</p>	<p>Portfolio contains evidence that:</p> <p>E1. Student can draw, describe, or otherwise show understanding of the concept that large things are made up of smaller pieces/parts.</p> <p>E2. Student can describe/demonstrate two physical properties (ex., color, size, texture) of two different objects.</p> <p>E3. Student can group objects based on three or more observable characteristics (ex., one sort based on color, one sort based on size, and a third sort based on texture).</p>	<p>Students will be able to:</p> <p>E1. Show that large things are made up of smaller pieces.</p> <p>E2. Describe some physical properties of objects.</p> <p>E3. Group objects based on observable characteristics (e.g., color, size, texture).</p>

Students will understand the structure of matter and the changes it can undergo.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>E1. Student can describe/demonstrate two physical properties of three given objects.</p> <p>E2. Student can define or otherwise demonstrate understanding of the <u>concept</u> of "matter".</p>	<p>Portfolio contains evidence that:</p> <p>E1. Student can identify a possible change in a physical property of a given object.</p> <p>E2. Student can describe/demonstrate understanding of the <u>concepts</u> of "matter" and physical changes in matter.</p>	<p>Portfolio contains evidence that:</p> <p>E1. Student can identify a possible change in the physical properties of given objects when one object chemically combines with another (e.g., rust).</p> <p>E2. Student can describe/demonstrate the meaning of "matter" and identify examples of physical and chemical changes in matter.</p>	<p>Portfolio contains evidence that:</p> <p>E1. Student can describe how the physical properties of objects sometimes change when one object chemically combines with another.</p> <p>E2. Student can describe/demonstrate how matter changes in both chemical and physical ways.</p>	<p>Students will be able to:</p> <p>E1. Describe how the physical properties of objects sometimes change when one object chemically combines with another.</p> <p>E2. Explain how matter changes in both chemical and physical ways.</p>

Students will gain knowledge about the earth and the processes that change it.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>F1. Student can identify 2 characteristic(s) of the weather on a given day.</p> <p>F2. Given pictures related to seasons of the year, and the name of a season, the student can indicate the picture(s) appropriate to the named season.</p> <p>F3. Student can identify two of the following weather factors: water, snow, wind, and ice.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can compare the weather on two climatically different days (e.g., snowy/rainy).</p> <p>F2. Student can identify the four seasons and match each to pictures of that season.</p> <p>F3. Student can identify water, snow, wind, and ice.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can describe/demonstrate two kinds of weather changes</p> <p>F2. Student can draw a conclusion about the relationships between observable weather patterns and the cycling of seasons.</p> <p>F3. Student can observe (identify) a change that is caused by each of two of the following factors: water, snow, wind, ice.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can describe/demonstrate three ways in which weather changes.</p> <p>F2. Student can draw two conclusions about the relationships between observable weather patterns and the cycling of the seasons.</p> <p>F3. Student can observe (identify) a change that is caused by each of the following factors: water, snow, wind, ice.</p>	<p>Students will be able to:</p> <p>F1. Describe the way weather changes.</p> <p>F2. Analyze the relationships between observable weather patterns and the cycling of the seasons.</p> <p>F3. Observe changes that are caused by water, snow, wind, and ice.</p>

Students will gain knowledge about the earth and the processes that change it.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>F1. Student can identify the continents on a map.</p> <p>F2. Student can give an example of one thing about the earth (ex., climate) that occurs in cycles.</p> <p>F3. Student can differentiate among rocks, minerals, and soils.</p> <p>F4. Student can define or otherwise demonstrate understanding of "a cycle".</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can indicate the continents on a map and describe/demonstrate understanding of the <u>concept</u> of "continent".</p> <p>F2. Student can give two examples of things about the earth (ex., climate) that occur in cycles.</p> <p>F3. Student can identify two differences among rocks, minerals, and soils.</p> <p>F4. Student can identify three stages of a cycle for a non-living thing (e.g., water cycle or rock cycle).</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can describe/demonstrate the <u>concept</u> that continents change in position over time.</p> <p>F2. Student can demonstrate an understanding of three things about the earth (ex., climate) that occur in cycles.</p> <p>F3. Student can describe/demonstrate three differences among minerals, rocks, and soils.</p> <p>F4. Student can indicate how water goes through a cyclic process of change in the environment.</p>	<p>Portfolio contains evidence that:</p> <p>F1. Student can describe/demonstrate the change in position of the continents over time.</p> <p>F2. Student can demonstrate an understanding of four or more things about the earth (ex., climate) that occur in cycles that vary in length and frequency.</p> <p>F3. Student can describe/demonstrate four differences among minerals, rocks, and soils.</p> <p>F4. Student can illustrate how water and one other substance go through a cyclic process of change in the environment.</p>	<p>Students will be able to:</p> <p>F1. Describe the change in position of the continents over time.</p> <p>F2. Demonstrate an understanding that many things about the earth (e.g., climate) occur in cycles that vary in length and frequency.</p> <p>F3. Describe differences among minerals, rocks, and soils.</p> <p>F4. Illustrate how water and other substances go through a cyclic process of change in the environment.</p>

Science & Technology Content Standard G - The Universe

PAAP Rubric Level 1

Students will gain knowledge about the universe and how humans have learned about it, and about the principles upon which it operates.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>G1. Student can identify night and day.</p> <p>G2. Student can identify a shadow.</p> <p>G3. Student can identify where the sun or stars are found (e.g., point to the sky).</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student can describe/demonstrate two or more differences between night and day and identify the seasons.</p> <p>G2. Student, using concrete objects, can create shadows when asked to do so.</p> <p>G3. Given pictures/models of the sun and stars, the student can identify each.</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student can describe/demonstrate the position of the sun relative to the Earth in explaining day and night and place the seasons in sequence.</p> <p>G2. Student can, using concrete objects, move the shadows of objects by changing the direction from which light is coming.</p> <p>G3. Student can identify the sun as one of many stars.</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student can describe/demonstrate the cycles of day/night and of seasons.</p> <p>G2. Student can describe/demonstrate two situations in which the shadows of objects change based on where light is coming from.</p> <p>G3. Student can demonstrate understanding that the sun is one of many stars in the universe and is the closest star to earth.</p>	<p>Students will be able to:</p> <p>G1. Explain the cycles of day/night and of seasons.</p> <p>G2. Demonstrate that shadows of objects change based on where light are coming from.</p> <p>G3. Demonstrate an understanding that the sun is one of many stars in the universe and is the closest star to earth.</p>

Science & Technology Content Standard G - The Universe

PAAP Rubric Level 2

Students will gain knowledge about the universe and how humans have learned about it, and about the principles upon which it operates.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>G1. Student can illustrate or otherwise describe the relative positions of the sun and Earth.</p> <p>G2. Student can demonstrate understanding that the sun produces heat or light.</p> <p>G3. Student can demonstrate understanding of the concept of "rotation" or "revolution".</p> <p>G4. Student can identify that the moon orbits or revolves around the earth.</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student can illustrate or otherwise describe the relative positions of the sun, moon, and Earth.</p> <p>G2. Student can demonstrate understanding that the sun produces heat and light.</p> <p>G3. Student can demonstrate understanding of the concepts of "rotation" and "revolution".</p> <p>G4. Student can identify ways in which the moon affects natural cycles on earth (e.g., tides).</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student can illustrate or otherwise describe the relative positions of the sun, moon, Earth and two other planets.</p> <p>G2. Student can trace the source of Earth's heat or light energy to the sun.</p> <p>G3. Student can describe/demonstrate the earth's rotation on its axis and its relationship to day length.</p> <p>G4. Student can list facts about the relationship between the earth and its moon (ex., revolves around the earth, reflects light from the sun to earth).</p>	<p>Portfolio contains evidence that:</p> <p>G1. Student can illustrate or otherwise describe the relative positions of the sun, moon, and planets.</p> <p>G2. Student can trace the sources of Earth's heat and light energy to the sun.</p> <p>G3. Student can describe/demonstrate the earth's rotation on its axis and earth's revolution around the sun.</p> <p>G4. Student can draw conclusions about the relationship between the earth and its moon (ex., observe and draw/otherwise explain the moon's revolution around the earth, chart the phases of the moon).</p>	<p>Students will be able to:</p> <p>G1. Illustrate the relative positions of the sun, moon, and planets.</p> <p>G2. Trace the sources of earth's heat and light energy to the sun.</p> <p>G3. Describe earth's rotation on its axis and its revolution around the sun.</p> <p>G4. Explore the relationship between the earth and its moon.</p>

Students will understand concepts of energy.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>H1. Student can identify source of light (lamp, sun, flashlight) or heat (radiator, stove, sun).</p> <p>H2. Student can match two things with their source of energy.</p>	<p>Portfolio contains evidence that:</p> <p>H1. Student can identify indoor and outdoor sources of heat and light.</p> <p>H2. Student can identify the source of energy for six or fewer living things.</p>	<p>Portfolio contains evidence that:</p> <p>H1. Student can draw, describe, or otherwise explain that the sun gives off light or heat energy.</p> <p>H2. Student can describe/demonstrate what energy does for three living things.</p>	<p>Portfolio contains evidence that:</p> <p>H1. Student can describe/demonstrate an understanding that the sun gives off light and heat energy.</p> <p>H2. Student can describe/demonstrate why living things need energy.</p>	<p>Students will be able to:</p> <p>H1. Demonstrate an understanding that the sun gives off light and heat energy.</p> <p>H2. Explain why living things need energy.</p>

Students will understand concepts of energy.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	<i>Learning Results</i> Performance Indicators
<p>Portfolio contains evidence that:</p> <p>H1. Student can demonstrate understanding of the concept of "energy".</p> <p>H2. Student can explain/demonstrate two ways one form of energy can be produced.</p>	<p>Portfolio contains evidence that:</p> <p>H1. Student can identify one form of energy (e.g., light, sound, heat).</p> <p>H2. Student can explain/demonstrate one way each of two forms of energy can be produced.</p>	<p>Portfolio contains evidence that:</p> <p>H1. Student can identify two forms of energy (e.g., light, sound, heat).</p> <p>H2. Student can explain/demonstrate two ways two different forms of energy can be produced.</p>	<p>Portfolio contains evidence that:</p> <p>H1. Student can identify three different forms of energy (e.g., light, sound, heat).</p> <p>H2. Student can explain/demonstrate ways four different forms of energy can be produced.</p>	<p>Students will be able to:</p> <p>H1. Identify different forms of energy (e.g., light, sound, heat).</p> <p>H2. Explain ways different forms of energy can be produced.</p>

Students will understand the motion of objects and how forces can change that motion.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>I1. Student can identify/demonstrate one way (ex., forward, backward, straight, zigzag, up, down, fast, slow, etc.) in which an object can move.</p> <p>I2. Student can demonstrate a change in motion (ex., stop/go, run/walk, forward/backward).</p>	<p>Portfolio contains evidence that:</p> <p>I1. Student can identify/demonstrate two ways (ex., forward, backward, straight, zigzag, up, down, fast, slow, etc.) in which an object can move.</p> <p>I2. Student can describe/demonstrate three different changes of motion.</p>	<p>Portfolio contains evidence that:</p> <p>I1. Student can describe/demonstrate three ways (ex. forward, backward, straight, zigzag, up, down, fast, slow, etc.) in which an object can move.</p> <p>I2. Student can describe/demonstrate one way in which the motion of a given object can be changed.</p>	<p>Portfolio contains evidence that:</p> <p>I1. Student can describe/demonstrate six ways (ex., forward, backward, straight, zigzag, up, down, fast, slow, etc.) in which an object can move.</p> <p>I2. Student can describe/demonstrate that the motion of an object can be changed.</p>	<p>Students will be able to:</p> <p>I1. Develop a variety of ways to describe the motion of an object.</p> <p>I2. Demonstrate that the motion of an object can be changed.</p>

Students will understand the motion of objects and how forces can change that motion.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>I1. Student can match different types of force (e.g., mechanical, electrical, magnetic) to their definitions.</p> <p>I2. Student can describe/demonstrate the differences between more massive and less massive objects.</p> <p>I3. Student can record the reactions when five different objects varying in size, weight, and/or shape are pushed or pulled.</p>	<p>Portfolio contains evidence that:</p> <p>I1. Student can describe/demonstrate the effects of a type of force (e.g., mechanical, electrical, magnetic) on motion.</p> <p>I2. Student can describe/demonstrate how the amount of force affects the motion of two objects.</p> <p>I3. Student can predict the reaction force generated by pushing or pulling three different objects.</p>	<p>Portfolio contains evidence that:</p> <p>I1. Student can describe/demonstrate the effects of two types of force (e.g., mechanical, electrical, magnetic) on motion.</p> <p>I2. Student can describe/demonstrate how the amount of force affects the motion of three objects which differ significantly in mass.</p> <p>I3. Student can generate three examples illustrating that when something is pushed or pulled, it exerts a reaction force.</p>	<p>Portfolio contains evidence that:</p> <p>I1. Student can describe/demonstrate the effects of three different types of force (e.g., mechanical, electrical, magnetic) on motion.</p> <p>I2. Student can draw conclusions about how the amount of force affects the motion of four more massive and less massive objects.</p> <p>I3. Student can generate four examples illustrating that when something is pushed or pulled, it exerts a reaction force.</p>	<p>Students will be able to:</p> <p>I1. Describe the effects of different types of forces (e.g., mechanical, electrical, magnetic) on motion.</p> <p>I2. Draw conclusions about how the amount of force affects the motion of more massive and less massive objects.</p> <p>I3. Generate examples illustrating that when something is pushed or pulled, it exerts a reaction force.</p>

Science & Technology Content Standard J - Inquiry and Problem Solving

PAAP Rubric Level 1

Students will apply inquiry and problem-solving approaches in science and technology.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>J1. Student can sort given objects into two groups based on the characteristics of measurements of the objects (ex., which is longer/shorter, wider/skinnier, bigger/smaller, etc.).</p> <p>J2. Student can choose from given options, an appropriate strategy to answer a given question.</p> <p>J3. Student can copy a pattern with two components.</p> <p>J4. Student can use a product to solve a problem in daily life (ex., to get from one level to another in a building/ramp, selecting a cup as the appropriate container for a liquid).</p>	<p>Portfolio contains evidence that:</p> <p>J1. Student can identify an appropriate tool (standard or non-standard) to use for a required measurement (ex., ruler to measure length of foot).</p> <p>J2. Student can use an appropriate strategy to answer a given question.</p> <p>J3. Student can recognize, copy, and extend a pattern with two components.</p> <p>J4. Student can match a product with the problem it was invented to solve (ex., toothbrush, eyeglasses).</p>	<p>Portfolio contains evidence that:</p> <p>J1. Student can make an accurate observation using the appropriate tool and unit of measure for a required measurement.</p> <p>J2. Student can generate questions and propose strategies to use in answering them.</p> <p>J3. Given two choices, student can make a prediction based on a pattern they have observed.</p> <p>J4. Student can identify a product and the problem it was designed to solve.</p>	<p>Portfolio contains evidence that:</p> <p>J1. Student can make accurate observations using appropriate tools and units of measure.</p> <p>J2. Student can ask questions and propose strategies and materials to use in seeking answers to them.</p> <p>J3. Student can use results in a purposeful way, which includes making two or more predictions based on patterns they have observed.</p> <p>J4. Student can identify two or more products that were invented to solve a problem and the problem they were designed to solve.</p>	<p>Students will be able to:</p> <p>J1. Make accurate observations using appropriate tools and units of measure.</p> <p>J2. Ask questions and propose strategies and materials to use in seeking answers to questions.</p> <p>J3. Use results in a purposeful way, which includes making predictions based on patterns they have observed.</p> <p>J4. Identify products which were invented to solve a problem.</p>

Students will apply inquiry and problem-solving approaches in science and technology.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>J1. Given objects, student can make an observation that can be measured (time, length, area, perimeter, weight, temperature, mass, capacity, volume) using a standard tool, and identify the appropriate tool.</p> <p>J2. Student can follow given steps of a simple scientific experiment.</p> <p>J3. Using a checklist of criteria for a fair test, student can determine if a given scientific test is fair.</p> <p>J4. Student can identify a need requiring a new invention.</p> <p>J5. Student can list factors such as time, place, or experimenter that can lead to differing data.</p> <p>J6. Given a set of data, student can list three facts related to the data.</p>	<p>Portfolio contains evidence that:</p> <p>J1. Given objects, student can make an observation that can be measured (time, length, area, perimeter, weight, temperature, mass, capacity, volume) using two different standard tools, and identify the appropriate tools.</p> <p>J2. Student can follow given steps of a simple scientific experiment and collect related data.</p> <p>J3. Given a scientific test, student can determine if it is a fair test, and record observed patterns.</p> <p>J4. Student can identify a need requiring a new invention and describe/demonstrate the attributes of an invention that would meet the need.</p> <p>J5. Given a specific experiment, student can identify how a variation(s) in one factor such as time, place, or experimenter might lead to differing data.</p> <p>J6. Given a set of data, student can list different conclusions that can be derived from it.</p>	<p>Portfolio contains evidence that:</p> <p>J1. Student can make accurate observations using two appropriate standard tools and two different units of measure (e.g., measurement to the nearest mm, ounce).</p> <p>J2. Student can conduct experiments, and analyze related data collected.</p> <p>J3. Given a scientific test, student can determine if it is a fair test and demonstrate an ability to interpret data to make further predictions.</p> <p>J4. Student can design an invention to meet a need.</p> <p>J5. Given a specific experiment, student can identify how a variation in each of two factors such as time, place, or experimenter might lead to differing data.</p> <p>J6. Given a set of data, student can describe/demonstrate how different conclusions can be derived from the same data, using one example.</p>	<p>Portfolio contains evidence that:</p> <p>J1. Student can make accurate observations using three appropriate standard tools and units of measure (e.g., measurement to the nearest mm, ounce, second).</p> <p>J2. Student can conduct scientific investigations by making observations, collecting and analyzing data, and doing experiments.</p> <p>J3. Student can use the results of an experiment in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</p> <p>J4. Student can design and build an invention, to meet a need. purpose.</p> <p>J5. Student can describe/demonstrate how differences in time, place, or experimenter can lead to different data, using two different examples.</p> <p>J6. Student can describe/demonstrate how different conclusions can be derived from the same data, using two different examples.</p>	<p>Students will be able to:</p> <p>J1. Make accurate observations using appropriate tools and units of measure.</p> <p>J2. Conduct scientific investigations: make observations, collect and analyze data, and do experiments.</p> <p>J3. Use results in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</p> <p>J4. Design and build an invention.</p> <p>J5. Explain how differences in time, place, or experimenter can lead to different data.</p> <p>J6. Explain how different conclusions can be derived from the same data.</p>

Students will learn to formulate and justify ideas and to make informed decisions.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>K1. Student can, given two points of view on a particular situation, identify the one with which he/she agrees.</p> <p>K2. Student can, given two choices, identify one that supports his/her point of view.</p> <p>K3. Student can identify an object based on one characteristic.</p> <p>K4. When provided with a relevant piece of information, student contributes it to the group at an appropriate time.</p> <p>K5. Given a choice of two scenarios student can identify the one that is logical (<i>makes sense</i>).</p> <p>K6. Student can copy a pattern with two or more components.</p>	<p>Portfolio contains evidence that:</p> <p>K1. Student can identify why he/she agrees with a specific point of view.</p> <p>K2. Student can identify two important pieces of information in a simple argument.</p> <p>K3. Student can, when shown an object, draw or otherwise describe two of its characteristics.</p> <p>K4. Given a topic for a brainstorming activity and an array of choices of information to use, student can identify information that would be useful for the activity.</p> <p>K5. Student can use one form of simple logic (ex. object permanence - object is still present even if it is covered).</p> <p>K6. Student can recognize, copy, and extend a pattern with two or more components.</p>	<p>Portfolio contains evidence that:</p> <p>K1. Student can identify facts that support a given point of view.</p> <p>K2. Student can describe what makes information important or unimportant in a simple argument.</p> <p>K3. Student can accurately describe three components of a given environment, person, object, etc.</p> <p>K4. Given a brainstorming topic, student can generate a relevant piece of information to contribute.</p> <p>K5. Student can use two forms of simple logic.</p> <p>K6. Given two choices, student can make a prediction based on a pattern they have observed.</p>	<p>Portfolio contains evidence that:</p> <p>K1. Student can examine (compare and contrast) the strengths and weaknesses of a simple argument.</p> <p>K2. Student can list important and unimportant information in simple arguments.</p> <p>K3. Student can make four accurate observations.</p> <p>K4. Student participates in brainstorming activities by contributing relevant pieces of information.</p> <p>K5. Student uses three forms of simple logic.</p> <p>K6. Student can discover relationships and patterns (ex., describe, extend, create, draw conclusions from).</p>	<p>Students will be able to:</p> <p>K1. Examine strengths and weaknesses of simple arguments.</p> <p>K2. Distinguish between important and unimportant information in simple arguments.</p> <p>K3. Make observations.</p> <p>K4. Participate in brainstorming activities.</p> <p>K5. Use various forms of simple logic.</p> <p>K6. Discover relationships and patterns.</p>

Science & Technology Content Standard K - Scientific Reasoning

PAAP Rubric Level 2

Students will learn to formulate and justify ideas and to make informed decisions.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>K1. From a given list, student can pick out a reasonable explanation of observed phenomena.</p> <p>K2. Student can describe/demonstrate his/her feelings related to given topics.</p> <p>K3. Given a list of statements, student can identify those that are conclusions based on an observation.</p> <p>K4. Given a claim and three types of evidence, student can identify the evidence needed to support the claim.</p> <p>K5. Given an idea, student can choose good reasons to support that idea from given examples.</p> <p>K6. Student can brainstorm ideas appropriate to a particular topic.</p>	<p>Portfolio contains evidence that:</p> <p>K1. Student can provide a logical alternative explanation for an observed phenomenon.</p> <p>K2. Student can separate feelings from reasoning as related to given topics.</p> <p>K3. Student can draw reasonable conclusions based on happenings in his/her daily life.</p> <p>K4. Given a claim, student can describe/demonstrate the type of evidence needed to support the claim.</p> <p>K5. Student can generate one good reason that would make a specific idea more believable.</p> <p>K6. Student can practice and apply brainstorming, and appropriately use one given intuitive thinking or logic based strategy.</p>	<p>Portfolio contains evidence that:</p> <p>K1. Student can provide two logical alternative explanations for observed phenomena.</p> <p>K2. Student can describe/demonstrate his/her feelings relative to a specific topic, and apply reasoning to make a decision related to the topic.</p> <p>K3. Student can draw accurate conclusions based on an observation.</p> <p>K4. Student can use one type of evidence to support a claim.</p> <p>K5. Student can generate give two good reasons that would make a specific idea more believable.</p> <p>K6. Student can practice and apply brainstorming, and either intuitive thinking or simple logic.</p>	<p>Portfolio contains evidence that:</p> <p>K1. Student can provide logical alternative explanations for two different sets of observed phenomena.</p> <p>K2. Student can describe/demonstrate how feelings can distort reasoning.</p> <p>K3. Student can draw accurate conclusions about two observations.</p> <p>K4. Student can use two types of evidence (e.g., logical, quantitative) to support a claim.</p> <p>K5. Student can describe/demonstrate understanding that ideas are more believable when supported by good reasons.</p> <p>K6. Student can practice and apply brainstorming, intuitive thinking, and simple logic.</p>	<p>Students will be able to:</p> <p>K1. Give alternative explanations for observed phenomena.</p> <p>K2. Describe how feelings can distort reasoning.</p> <p>K3. Draw conclusions about observations.</p> <p>K4. Use various types of evidence (e.g., logical, quantitative) to support a claim.</p> <p>K5. Demonstrate an understanding that ideas are more believable when supported by good reasons.</p> <p>K6. Practice and apply simple logic, intuitive thinking, and brainstorming.</p>

Students will communicate effectively in the application of science and technology.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>L1. Given a set of two to four objects, the student can choose the one that has a specific observable characteristic (ex., "Show me the one that is red.").</p> <p>L2. Student can respond appropriately to a single step instruction given through symbols, words, or gestures.</p> <p>L3. Student can, given a choice of two questions, identify the one appropriate to a given situation.</p> <p>L4. Student can, when confronted with a real-life problem, take an appropriate step towards a solution (ex., turning on lights in a dark room).</p> <p>L5. Student can collect data for a given arrangement (ex., weather chart).</p> <p>L6. Given a set of pictures, objects, and/or symbols, student can choose those related to a specific scientific or technological idea (ex., day's weather, day/night cycle).</p>	<p>Portfolio contains evidence that:</p> <p>L1. Given a set of five or more objects, the student can identify all the ones that have the same specific observable characteristic (ex., "Show me all the objects that are red.").</p> <p>L2. Student can respond appropriately to multiple step instructions given through symbols, words, or gestures.</p> <p>L3. Student can, given four questions, match them to given situations to which they are appropriate.</p> <p>L4. Student can use pictorial, verbal, and/or written methods to describe/demonstrate an appropriate step to move towards a solution to a problem.</p> <p>L5. Student can collect and arrange data.</p> <p>L6. Given a group of pictures, objects, and/or symbols, student can choose those related to specific scientific and technological ideas.</p>	<p>Portfolio contains evidence that:</p> <p>L1. Student can describe/demonstrate and compare items on the basis of one attribute.</p> <p>L2. Student can respond appropriately to multiple step instructions given through symbols, words, or gestures, and, using words or symbols, write/demonstrate a one-step direction to be followed by others.</p> <p>L3. Student can generate one or more clarifying questions appropriate to a given situation.</p> <p>L4. Student can use verbal, pictorial, and/or written methods to describe/demonstrate the steps in the process appropriate to solve a specific problem.</p> <p>L5. Student can solve problems by collecting, arranging, and interpreting data.</p> <p>L6. Student can use objects and/or pictures to represent one scientific or one technological idea (ex., life cycle, renewable and non-renewable resources).</p>	<p>Portfolio contains evidence that:</p> <p>L1. Student can describe/demonstrate and compare items on the basis of two attributes.</p> <p>L2. Student can respond appropriately to multiple step instructions given through symbols, words, or gestures, and, using words or symbols, write/demonstrate a two-step direction to be followed by others.</p> <p>L3. Student can generate clarifying questions appropriate to two given situations.</p> <p>L4. Student can use verbal, pictorial, and/or written methods to describe/demonstrate the steps in the processes needed to solve two specific problems.</p> <p>L5. Student can make one or more simple graphs (ex., bar graph, pie chart) and interpret data placed on the graph.</p> <p>L6. Student can use objects and/or pictures to represent two or more scientific and two or more technological ideas (ex., life cycle, renewable and non-renewable resources).</p>	<p>Students will be able to:</p> <p>L1. Describe and compare things in terms of number, shape, texture, size, weight, color, and behavior.</p> <p>L2. Read and write instructions to be followed or instructions which explain procedures.</p> <p>L3. Ask clarifying questions.</p> <p>L4. Explain problem-solving processes using verbal, pictorial, and written methods.</p> <p>L5. Make and read simple graphs.</p> <p>L6. Use objects and pictures to represent scientific and technological ideas.</p>

Students will communicate effectively in the application of science and technology.

Performance Level 1	Performance Level 2	Performance Level 3	Performance Level 4	Learning Results Performance Indicators
<p>Portfolio contains evidence that:</p> <p>L1. Student can list facts related to experiments or activities (e.g., interviews, discussions, field work).</p> <p>L2. Student can generate/ask clarifying questions related to two different situations.</p> <p>L3. Given two options in a specific situation, student can reflect on the options and communicate his/her choice.</p> <p>L4. Student can match related pictures to a given procedure or idea.</p>	<p>Portfolio contains evidence that:</p> <p>L1. Student can record results of experiments or activities (e.g., interviews, discussions, field work).</p> <p>L2. Student can generate/ask clarifying and an extending question related to three or more different situations.</p> <p>L3. Student can reflect on a topic of choice using an appropriate activity (ex., discussion, journal, self-assessment, etc.)</p> <p>L4. Student can select appropriate sketches, physical representations, or manipulatives to demonstrate given procedures or ideas.</p>	<p>Portfolio contains evidence that:</p> <p>L1. Student can record results of experiments or activities (e.g., interviews, discussions, field work), and communicate what he/she has learned.</p> <p>L2. Student can generate/ask clarifying or extending questions related to two specific topics.</p> <p>L3. Student can reflect on a science or technology related topic through an appropriate activity (ex., discussion, journal, self-assessment, etc.).</p> <p>L4. Student can make or use two of the following to explain procedures and ideas: sketches, tables, graphs, physical representations, manipulatives.</p>	<p>Portfolio contains evidence that:</p> <p>L1. Student can record results of experiments or activities (e.g., interviews, discussions, field work), and summarize and communicate what they have learned.</p> <p>L2. Student can generate/ask clarifying and extending questions related to three specific topics.</p> <p>L3. Student can reflect on topics related to science and technology using two different kinds of activities (ex., discussions, journals, and self-assessment).</p> <p>L4. Student can make and/or use three of the following to explain procedures and ideas: sketches, tables, graphs, physical representations, manipulatives.</p>	<p>Students will be able to:</p> <p>L1. Record results of experiments or activities (e.g., interviews, discussions, field work) and summarize and communicate what they have learned.</p> <p>L2. Ask clarifying and extending questions.</p> <p>L3. Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</p> <p>L4. Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</p>

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*Students will communicate effectively in the application of science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                        | Performance Level 2                                                                                                                                                                                                                                                                                                                                    | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Learning Results<br>Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <p>Portfolio contains evidence that:</p> <p>L5. Student can <b>gather information</b> using <b>two</b> different <b>media</b>.</p> <p>L6. Student can <b>point out differences</b> between <b>information from two sources</b> on the same topic.</p> <p>L7. Student can, when <b>given a choice of role</b>, appropriately <b>carry out its functions in a group</b>.</p> | <p>Portfolio contains evidence that:</p> <p>L5. Student can <b>gather and present information</b> using <b>two</b> different <b>media</b>.</p> <p>L6. Student can <b>cite examples of bias in a single source</b>.</p> <p>L7. Student can, when repeatedly <b>assigned the same role</b>, appropriately <b>carry out its functions in a group</b>.</p> | <p>Portfolio contains evidence that:</p> <p>L5. Student can <b>gather and present information using two different media including computers</b> (e.g., spreadsheets, word processing, programming, graphics, or modeling).</p> <p>L6. Student can <b>cite examples of bias in information sources and question the validity of one source's information when compared to information from another source</b>.</p> <p>L7. Student can appropriately <b>carry out two different assigned roles</b> (e.g., reader, recorder), <b>in a group</b>.</p> | <p>Portfolio contains evidence that:</p> <p>L5. Student can <b>gather and present information using three different media including computers</b> (e.g., spreadsheets, word processing, programming, graphics, or modeling).</p> <p>L6. Student can <b>cite examples of bias in information sources and, based on a comparison of three sources, question the validity of specific information</b>.</p> <p>L7. Student can appropriately <b>carry out three or more assigned roles</b> (e.g., reader, recorder), <b>in different groups</b>.</p> | <p><b>Students will be able to:</b></p> <p><b>L5. Gather and effectively present information, using a variety of media including computers (e.g., spreadsheets, word processing, programming, graphics, modeling).</b></p> <p><b>L6. Cite examples of bias in information sources and question the validity of information from varied sources.</b></p> <p><b>L7. Function effectively in groups within various assigned roles (e.g., reader, recorder).</b></p> |

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# Science & Technology Content Standard M - Implications of Science and Technology PAAP Rubric Level 1

*Students will understand the historical, social, economic, environmental, and ethical implications of science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Learning Results<br>Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>identify components of the world</b> around them (ex., sky, grass, sun).</p> <p>M2. Student can <b>match an invention to what it does</b>.</p> <p>M3. Student can <b>identify</b> a commonly used <b>resource</b> in their environment (ex., food, trees).</p> <p>M4. Student can <b>participate in</b> at least <b>one</b> classroom or school <b>practice for recycling</b>.</p> <p>M5. Student can appropriately <b>use an invention</b> for its intended purpose.</p> | <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>pick out</b> of given stories or legends one part that <b>attempts to explain the world</b>.</p> <p>M2. <b>Given a description of two</b> purposes, the student can <b>select the inventions serving those purposes</b> from a <b>group of four</b> or more inventions.</p> <p>M3. Student can <b>identify two</b> or more commonly used <b>resources and where they come from</b>.</p> <p>M4. Student can <b>identify/demonstrate two</b> practices for recycling.</p> <p>M5. Student can <b>identify two or more inventions</b> that he/she uses and the <b>need that each meets</b>.</p> | <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>identify what</b> about the world a <b>story, legend or scientific explanation is trying to make understandable</b>.</p> <p>M2. Student can <b>describe/demonstrate understanding</b> related to two <b>inventions, what they do, and how they work</b>.</p> <p>M3. Student can <b>identify two</b> commonly used <b>resources, where they come from, and where waste products</b> resulting from their work <b>go</b>.</p> <p>M4. Student can <b>describe/demonstrate three</b> practices for recycling.</p> <p>M5. Student can <b>describe/demonstrate how life would be different without two specific inventions and identify one piece of specific scientific knowledge</b> that made a difference in his/her life.</p> | <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>describe/demonstrate how stories, legends, and scientific explanations</b> are different ways in which people <b>try to make the world understandable</b>.</p> <p>M2. Student can <b>describe/demonstrate two inventions, what they do, how they work, and how they have made life easier</b>.</p> <p>M3. Student can <b>identify three</b> commonly used <b>resources, where they come from, and where waste products</b> resulting from their use <b>go</b>.</p> <p>M4. Student can <b>describe/demonstrate three</b> practices for recycling, and <b>two practices for caring for resources</b>.</p> <p>M5. Student can <b>describe/demonstrate how life would be different without two specific inventions and identify two pieces of specific scientific knowledge</b> that have made a difference in his/her life.</p> | <p><b>Students will be able to:</b></p> <p><b>M1. Describe how legends, stories, and scientific explanations are different ways in which people attempt to explain the world.</b></p> <p><b>M2. Describe at least two inventions, what they do, how they work, and how they have made life easier.</b></p> <p><b>M3. Identify commonly used resources, their sources, and where waste products go.</b></p> <p><b>M4. Demonstrate some practices for recycling and care of resources.</b></p> <p><b>M5. Explain how their lives would be different without specific inventions or scientific knowledge.</b></p> |

# Science & Technology Content Standard M - Implications of Science and Technology PAAP Rubric Level 2

*Students will understand the historical, social, economic, environmental, and ethical implications of science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>identify</b> the <b>technological solutions used by two different cultures to one need or problem</b> (e.g., construction, clothing, agricultural tools and methods).</p> <p>M2. Student can <b>collect information about a specific scientist <u>or</u> inventor.</b></p> <p>M3. Student can <b>identify two or more technologies</b> (e.g., transportation, irrigation) that <b>they use</b> in their environment.</p> <p>M4. Student can <b>identify two conservation practices</b> from daily life and the reason(s) for their use.</p> | <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>draw conclusions about the technological solutions used by two different cultures to two needs or problems</b> (e.g., construction, clothing, agricultural tools and methods).</p> <p>M2. Student can <b>collect information about a specific scientist <u>and</u> a specific inventor.</b></p> <p>M3. Student can <b>give factual information related to a technology</b> (e.g., transportation, irrigation) that <b>has altered human settlement.</b></p> <p>M4. Student can <b>identify renewable and non-renewable resources</b> among a given group of resources.</p> | <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>draw conclusions about</b> how <b>three different cultures</b> have <b>found different technological solutions to deal with two similar needs or problems</b> (e.g., construction, clothing, agricultural tools and methods).</p> <p>M2. Student can <b>describe/demonstrate the role of a scientist <u>or</u> an inventor</b>, using information collected.</p> <p>M3. Student can <b>identify two technologies</b> (e.g., transportation, irrigation) that <b>have altered human settlement</b> and <b>describe/demonstrate why</b> the technologies had that effect.</p> <p>M4. Student can <b>describe/demonstrate practices for conservation</b> in daily life, and <b>describe/demonstrate two non-renewable resources.</b></p> | <p>Portfolio contains evidence that:</p> <p>M1. Student can <b>draw conclusions about</b> how <b>four cultures</b> have found <b>different technological solutions to deal with two similar needs or problems</b> (e.g., construction, clothing, agricultural tools and methods).</p> <p>M2. Student can <b>collect information and use it to describe/demonstrate the roles of scientists <u>and</u> inventors.</b></p> <p>M3. Student can <b>draw conclusions about how three technologies</b> (e.g., transportation, irrigation) have altered human settlement.</p> <p>M4. Student can <b>describe/demonstrate practices for conservation</b> in daily life, and <b>describe/demonstrate understanding that renewable and non-renewable resources have limits.</b></p> | <p><b>Students will be able to:</b></p> <p><b>M1. Explore how cultures have found different technological solutions to deal with similar needs or problems (e.g., construction, clothing, agricultural tools and methods).</b></p> <p><b>M2. Investigate and describe the role of scientists and inventors.</b></p> <p><b>M3. Explore how technology (e.g., transportation, irrigation) has altered human settlement.</b></p> <p><b>M4. Explain practices for conservation in daily life, based on recognition that renewable and non-renewable resources have limits.</b></p> |

# Science & Technology Content Standard A - Classifying Life Forms

## PAAP Rubric Level 3

*Students will understand that there are similarities within the diversity of all living things.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                      | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                    | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 3.</p> <p>Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Classifying Life Forms at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Compare systems of classifying organisms in different ways using different characteristics.</b></li> <li><b>2. Decipher the system for assigning a scientific name to every living thing.</b></li> <li><b>3. Describe some structural and behavioral adaptations that allow organisms to survive in a changing environment.</b></li> </ol> |

# Science & Technology Content Standard A - Classifying Life Forms

# PAAP Rubric Level 4

*Students will understand that there are similarities within the diversity of all living things.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                      | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                    | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard A, Classifying Life Forms, at PAAP Rubric Level 4.</p> <p>Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Classifying Life Forms at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Explain the role of DNA in resolving questions of relationship and evolutionary change.</b></li> <li><b>2. Describe similarities and differences among organisms within each level of the taxonomic system for classifying organisms (kingdom through species).</b></li> <li><b>3. Analyze the basic characteristics of living things, including their need for food, water, and gases and the ability to reproduce.</b></li> </ol> |

## Science & Technology Content Standard B - Ecology

## PAAP Rubric Level 3

*Students will understand how living things depend on one another and on non-living aspects of the environment.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                       | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 3. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Ecology at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Describe in general terms the chemical processes of photosynthesis and respiration.</b></li> <li><b>2. Analyze how the finite resources in an ecosystem limit the types and populations of organisms within it.</b></li> <li><b>3. Describe succession and other ways that ecosystems can change over time.</b></li> <li><b>4. Generate examples of the variety of ways that organisms interact (e.g., competition, predator/prey, parasitism/mutualism).</b></li> <li><b>5. Describe various mechanisms found in the natural world for transporting living and non-living matter and the results of such movements.</b></li> </ol> |



## Science & Technology Content Standard B - Ecology

## PAAP Rubric Level 4

*Students will understand how living things depend on one another and on non-living aspects of the environment.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                       | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard B, Ecology, at PAAP Rubric Level 4. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Ecology at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Illustrate the cycles of matter in the environment and explain their interrelationships.</b></li> <li><b>2. Compare the process of photosynthesis and respiration, and describe the factors that affect them.</b></li> <li><b>3. Analyze the factors that affect population size (e.g., reproductive and survival rates).</b></li> <li><b>4. Analyze the impact of human and other activities on the type and pace of change in ecosystems.</b></li> </ol> |

# Science & Technology Content Standard C - Cells

# PAAP Rubric Level 3

*Students will understand that cells are the basic units of life.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                              | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard C, Cells, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard C, Cells, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard C, Cells at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard C, Cells, at PAAP Rubric Level 3. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Cells at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Compare and contrast human organ systems with those of other species.</b></li> <li><b>2. Prepare and examine microscope slides of single-celled and multi-celled organisms.</b></li> <li><b>3. Describe the structure and function of major organs in human systems.</b></li> <li><b>4. Identify the causes and effects of diseases, explain their transmission, and identify prevention strategies.</b></li> <li><b>5. Describe how body systems work together.</b></li> </ol> |

# Science & Technology Content Standard C - Cells

# PAAP Rubric Level 4

*Students will understand that cells are the basic units of life.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                              | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard C, Cells, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard C, Cells, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard C, Cells at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard C, Cells, at PAAP Rubric Level 4. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Cells at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Relate the parts of a cell to their function.</b></li> <li><b>2. Illustrate how cells replicate and transmit information, including the roles of DNA and RNA.</b></li> <li><b>3. Discuss the function of the important "molecules of life" – proteins (including enzymes and hormones), carbohydrates, lipids, and nucleic acids.</b></li> <li><b>4. Explain how the human body protects itself against disease and how the body might lose that ability.</b></li> <li><b>5. Analyze and debate basic principles of genetic engineering: how it is done, its uses, and some ethical implications.</b></li> </ol> |

# Science & Technology Content Standard D - Continuity and Change

# PAAP Rubric Level 3

*Students will understand the basis for all life and that all living things change over time.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                              | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                   | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 3. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Continuity and Change at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Describe how fossils can be used by scientists to trace the history of a species.</b></li> <li><b>2. Explain how scientists use fossils to prove that life forms, climate, environment, and geologic features in a certain location are not the same now as they were in the past.</b></li> <li><b>3. Provide examples of the concept of natural and artificial selection and its role in species changes over time.</b></li> <li><b>4. Compare how sexually and asexually reproducing species transfer genetic information to offspring.</b></li> </ol> |

# Science & Technology Content Standard D - Continuity and Change

# PAAP Rubric Level 4

*Students will understand the basis for all life and that all living things change over time.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                              | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                   | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard D, Continuity and Change, at PAAP Rubric Level 4. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Continuity and Change at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Explain how mutations can be caused by gene mutation or chromosomal alteration and describe the possible results of such mutations on individuals or populations.</b></li> <li><b>2. Describe why the offspring of sexually reproducing species have different survival rates that those of asexually reproducing species under a variety of conditions. Describe the advantages and disadvantages of each.</b></li> <li><b>3. Explain and document the importance of relatively short-term changes (e.g., one generation) on a species' survival.</b></li> <li><b>4. Describe how genetic manipulation can cause unusually rapid changes in species.</b></li> <li><b>5. Compare and contrast fertilization, zygote formation, and embryo development in humans and other species.</b></li> <li><b>6. Analyze a theory scientists use to explain the origin of life.</b></li> <li><b>7. Explain both the evidence used to develop the geologic time scale and why an awareness of geologic time is important to an understanding of the process of change in the universe as well as on earth.</b></li> </ol> |

# Science & Technology Content Standard E - Structure of Matter

# PAAP Rubric Level 3

*Students will understand the structure of matter and the changes it can undergo.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                            | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                   | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                 | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 3.</p> <p>Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Structure of Matter at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Predict and test whether objects will float or sink based on a qualitative and quantitative understanding of the concepts of density and buoyancy.</b></li> <li><b>2. Describe the evidence that all matter consists of particles called atoms that are made up of certain smaller particles.</b></li> <li><b>3. Use the Periodic Table to group elements based on their characteristics.</b></li> <li><b>4. Describe how a substance can combine with different substances in different ways, depending on the conditions and the properties of each substance.</b></li> <li><b>5. Describe how the motion of the particles of matter determines the state of that matter (e.g., solid, liquid, gas, plasma) found in the world.</b></li> <li><b>6. Explain how the relatively small number of naturally occurring elements can result in the large variety of substances found in the world.</b></li> <li><b>7. Investigate the similarities and differences between elements, compounds, and mixtures.</b></li> <li><b>8. Demonstrate the law of conservation of matter.</b></li> </ol> |

# Science & Technology Content Standard E - Structure of Matter

# PAAP Rubric Level 4

*Students will understand the structure of matter and the changes it can undergo.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                            | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                   | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                 | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard E, Structure of Matter, at PAAP Rubric Level 4. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Structure of Matter at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>Trace the development of models of the atom to the present and describe how each model reflects the scientific understanding of their time.</b></li> <li><b>Analyze how matter is affected by changes in temperature, pressure, and volume.</b></li> <li><b>Describe the characteristics and behavior of acids and bases.</b></li> <li><b>Describe an application of the Law of Conservation of Matter.</b></li> <li><b>Describe how atoms are joined by chemical bonding.</b></li> <li><b>Compare the physical and chemical characteristics of elements.</b></li> <li><b>Describe nuclear reactions, including fusion, fission, and decay, their occurrences in nature, and how they can be used by humans.</b></li> </ol> |



# Science & Technology Content Standard F – The Earth

# PAAP Rubric Level 3

*Students will gain knowledge about the earth and the processes that change it.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                         | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                       | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 3. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for The Earth at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Demonstrate how the earth's tilt on its axis results in the seasons.</b></li> <li><b>2. Describe how soils are formed and why soils differ from one place to another.</b></li> <li><b>3. Explain the evidence scientists use when they give the age of the earth.</b></li> <li><b>4. Describe factors that can cause short-term and long-term changes to the earth.</b></li> <li><b>5. Classify and identify rocks and minerals based on their physical and chemical properties, their composition, and the processes which formed them.</b></li> <li><b>6. Describe the many products used by humans that are derived from materials in the earth's crust.</b></li> <li><b>7. Demonstrate factors affecting the flow of groundwater.</b></li> </ol> |



# Science & Technology Content Standard F – The Earth

# PAAP Rubric Level 4

*Students will gain knowledge about the earth and the processes that change it.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                         | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                       | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard F, The Earth, at PAAP Rubric Level 4. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for The Earth at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Describe how air pressure, temperature, and moisture interact to cause changes in the weather.</b></li> <li><b>2. Analyze potential effects of changes in the earth's oceans and atmosphere.</b></li> <li><b>3. Describe the impact of plate movement and erosion on the rock cycle.</b></li> <li><b>4. Describe ways that scientists measure long periods of time and determine the age of very old objects.</b></li> <li><b>5. Demonstrate how rocks and minerals are used to determine geologic history.</b></li> <li><b>6. Analyze the changes in continental position and the evidence that supports the concept of tectonic plates.</b></li> </ol> |

## Science & Technology Content Standard G – The Universe

## PAAP Rubric Level 3

*Students will gain knowledge about the universe and how humans have learned about it, and about the principles upon which it operates.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                            | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                          | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard G, The Universe, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard G, The Universe, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard G, The Universe, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard G, The Universe, at PAAP Rubric Level 3.</p> <p>Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for The Universe at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Compare past and present knowledge about characteristics of stars (e.g., composition, location, life-cycles) and explain how people have learned about them.</b></li> <li><b>2. Describe the concept of galaxies, including size and number of stars.</b></li> <li><b>3. Compare and contrast distances and the time required to travel those distances on earth, in the solar system, in the galaxy, and between galaxies.</b></li> <li><b>4. Describe scientists' exploration of space and the objects they have found (e.g., comets, asteroids, pulsars).</b></li> <li><b>5. Describe the motions of moons, planets, stars, solar systems, and galaxies.</b></li> </ol> |

## Science & Technology Content Standard G – The Universe

## PAAP Rubric Level 4

*Students will gain knowledge about the universe and how humans have learned about it, and about the principles upon which it operates.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                     | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                            | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                          | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                |
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*Students will understand concepts of energy.*

| <b>Performance Level 1</b>                                                                                                                                                                                                                                                                                                                                                                                        | <b>Performance Level 2</b>                                                                                                                                                                                                                                                                                                                                                               | <b>Performance Level 3</b>                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Performance Level 4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Learning Results Performance Indicators</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 3. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Energy at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>Analyze the benefits and drawbacks of energy conversions (e.g., in electricity generation).</b></li> <li><b>Demonstrate that energy cannot be created or destroyed but only changed from one form to another.</b></li> <li><b>Compare and contrast the ways energy travels (e.g., waves, conduction, convection, radiation).</b></li> <li><b>Describe the characteristics of static and current electricity.</b></li> <li><b>Categorize energy sources as renewable or non-renewable and compare how these sources are used by humans.</b></li> <li><b>Describe how energy put in or taken out of a system can cause changes in the motion of particles in matter.</b></li> </ol> |

# Science & Technology Content Standard H- Energy

# PAAP Rubric Level 4

*Students will understand concepts of energy.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                      | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                    | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard H, Energy, at PAAP Rubric Level 4. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Energy at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>Analyze the evidence that leads scientists to conclude that light behaves somewhat like a wave and somewhat like a particle.</b></li> <li><b>Examine and describe how light is reflected and refracted (deflected) by mirrors and lenses.</b></li> <li><b>Explain or demonstrate how sound waves travel.</b></li> <li><b>Analyze the relationship between the kinetic and potential energy of a falling object.</b></li> <li><b>Use mathematics to describe the work and power in a system.</b></li> <li><b>Describe the relationship between matter and energy and how matter releases energy through the processes of nuclear fission and fusion.</b></li> <li><b>Use mathematics to describe and predict electrical and magnetic activity (e.g., current, resistance, voltage).</b></li> <li><b>Compare and contrast how conductors, semiconductors, and superconductors work and describe their present and potential uses.</b></li> <li><b>Demonstrate an understanding that energy can be found in chemical bonds and can be used when it is released from their bonds.</b></li> </ol> |

# Science & Technology Content Standard I - Motion

# PAAP Rubric Level 3

*Students will understand the motion of objects and how forces can change that motion.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                      | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                    | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                  |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 3. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Motion at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Describe the motion of objects using knowledge of Newton's Laws.</b></li> <li><b>2. Use mathematics to describe the motion of objects (e.g., speed, distance, time, acceleration).</b></li> <li><b>3. Describe and quantify the ways machines can provide mechanical advantages in producing motion.</b></li> </ol> |

# Science & Technology Content Standard I - Motion

# PAAP Rubric Level 4

*Students will understand the motion of objects and how forces can change that motion.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                      | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                    | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge and skills identified in the targeted Performance Indicator for Content Standard I, Motion, at PAAP Rubric Level 4. Understanding may be demonstrated by using the concept(s) to describe, predict, or explain; representing the concept in multiple ways; or by explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Motion at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Use mathematics to describe the law of conservation of momentum.</b></li> <li><b>2. Explain some current theories of gravitational force.</b></li> <li><b>3. Use Newton's Laws to qualitatively and quantitatively describe the motion of objects.</b></li> <li><b>4. Describe how forces affect fluids (e.g., air and water).</b></li> <li><b>5. Explain the relationship between temperature, heat, and molecular motion.</b></li> <li><b>6. Describe how forces within and between atoms affect their behavior and the properties of matter.</b></li> </ol> |



# Science & Technology Content Standard J - Inquiry and Problem Solving

# PAAP Rubric Level 3

*Students will apply inquiry and problem-solving approaches in science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                           | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                         | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 3.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 3. The PAAP contains evidence of accurate, appropriate, observation, investigation (asking questions and proposing strategies), data collection and analysis, drawing conclusions, or using results.</p> <p>The PAAP contains evidence that the student has met the standards for Inquiry and Problem Solving at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Make accurate observations using appropriate tools and units of measure.</b></li> <li><b>2. Design and conduct scientific investigations which include controlled experiments and systematic observations.</b></li> <li><b>3. Verify and evaluate scientific investigations and use the results in a purposeful way.</b></li> <li><b>4. Compare and contrast the processes of scientific inquiry and the technological method.</b></li> <li><b>5. Explain how personal bias can affect observations.</b></li> <li><b>6. Design, construct, and test a device (invention) that solves a special problem.</b></li> </ol> |



# Science & Technology Content Standard J - Inquiry and Problem Solving

# PAAP Rubric Level 4

*Students will apply inquiry and problem-solving approaches in science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                           | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                         | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 4.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the concepts, skills, and knowledge identified in the targeted Performance Indicator for Content Standard J, Inquiry and Problem Solving, at PAAP Rubric Level 4. The PAAP contains evidence of accurate, appropriate observation, investigation (asking questions and proposing strategies), data collection and analysis, drawing conclusions, or using results.</p> <p>The PAAP contains evidence that the student has met the standards for Inquiry and Problem Solving at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Make accurate observations using appropriate tools and units of measure.</b></li> <li><b>2. Verify, evaluate, and use results in a purposeful way. This includes analyzing and interpreting data, making predictions based on observed patterns, testing solutions against the original problem conditions, and formulating additional questions.</b></li> <li><b>3. Demonstrate the ability to use scientific inquiry and technological method with short term and long term investigations, recognizing that there is more than one way to solve a problem. Demonstrate knowledge of when to try different strategies.</b></li> <li><b>4. Design and construct a device to perform a specific function, then redesign for improvement (e.g., performance, cost).</b></li> </ol> |

# Science & Technology Content Standard K - Scientific Reasoning

# PAAP Rubric Level 3

*Students will learn to formulate and justify ideas and to make informed decisions.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <p>Evidence indicates that the student is in the initial stages of development in the application of Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 3. Student work includes little or no explanation to support conclusions or findings.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the application of Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 3. Student work includes limited attempts at an explanation(s) to support conclusions or findings.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to apply Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 3. Student work includes some explanations to support conclusions or findings.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately apply Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 3. The PAAP contains evidence of explanations that provide sufficient justification to support conclusions or findings, including a variety of evidence.</p> <p>The PAAP contains evidence that the student has met the standards for Scientific Reasoning at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Examine the ways people form generalizations.</b></li> <li><b>2. Identify exceptions to proposed generalizations.</b></li> <li><b>3. Identify basic informal fallacies in arguments.</b></li> <li><b>4. Analyze means of slanting information.</b></li> <li><b>5. Identify stereotypes.</b></li> <li><b>6. Support reasoning by using a variety of evidence.</b></li> <li><b>7. Show that proving a hypothesis false is easier than proving it true, and explain why.</b></li> <li><b>8. Construct logical arguments.</b></li> <li><b>9. Apply analogous reasoning.</b></li> </ol> |

# Science & Technology Content Standard K - Scientific Reasoning

# PAAP Rubric Level 4

*Students will learn to formulate and justify ideas and to make informed decisions.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <p>Evidence indicates that the student is in the initial stages of development in the application of Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 4. Student work includes little or no explanation to support conclusions or findings.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the application of Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 4. Student work includes limited attempts at an explanation(s) to support conclusions or findings.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to apply Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 4. Student work includes some explanations to support conclusions or findings.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately apply Scientific Reasoning as identified in the targeted Performance Indicator for Content Standard K at PAAP Rubric Level 4. The PAAP contains evidence of explanations that provide sufficient justification to support conclusions or findings, including a variety of evidence.</p> <p>The PAAP contains evidence that the student has met the standards for Scientific Reasoning at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Judge the accuracy of alternative explanations by identifying the evidence necessary to support them.</b></li> <li><b>2. Explain why agreement among people does not make an argument valid.</b></li> <li><b>3. Develop generalizations based on observations.</b></li> <li><b>4. Determine when there is a need to revise studies in order to improve their validity through better sampling, controls or data analysis techniques.</b></li> <li><b>5. Produce inductive and deductive arguments to support conjecture.</b></li> <li><b>6. Analyze situations where more than one logical conclusion can be drawn.</b></li> </ol> |

# Science & Technology Content Standard L - Communication

# PAAP Rubric Level 3

*Students will communicate effectively in the application of science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <p>Evidence indicates that the student is in the initial stages of development in the use of Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 3. Student work includes little or no scientific vocabulary, symbols, or visual representation, and few descriptions of procedures and conclusions.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 3. Student work includes attempts to use scientific vocabulary, symbols, or visual representation and/or provides some descriptions of procedures and conclusions.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 3. Student work includes some scientific vocabulary, symbols, or visual representation and/or provides some descriptions of procedures and conclusions.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 3. The PAAP contains evidence of the use of accurate, appropriate scientific vocabulary, symbols or visual representation, and provides a complete description of procedures and conclusions.</p> <p>The PAAP contains evidence that the student has met the standards for Communication at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Discuss scientific and technological ideas and make conjectures and convincing arguments.</b></li> <li><b>2. Ask clarifying and extending questions.</b></li> <li><b>3. Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</b></li> <li><b>4. Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</b></li> <li><b>5. Gather and effectively present information, using a variety of media including computers (e.g., spreadsheets, word processing, programming, graphics, modeling).</b></li> <li><b>6. Cite examples of bias in information sources and question the validity of information from varied sources.</b></li> <li><b>7. Function effectively in groups within various assigned roles (e.g., reader, recorder).</b></li> </ol> |

# Science & Technology Content Standard L - Communication

# PAAP Rubric Level 4

*Students will communicate effectively in the application of science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <p>Evidence indicates that the student is in the initial stages of development in the use of Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 4. Student work includes little or no scientific vocabulary, symbols, or visual representation, and few descriptions of procedures and conclusions.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 4. Student work includes attempts to use scientific vocabulary, symbols, or visual representation and/or provides some descriptions of procedures and conclusions.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 4. Student work includes some scientific vocabulary, symbols, or visual representation and/or provides some descriptions of procedures and conclusions.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use Communication as identified in the targeted Performance Indicator for Content Standard L at PAAP Rubric Level 4. The PAAP contains evidence of the use of accurate, appropriate scientific vocabulary, symbols or visual representation, and provides a complete description of procedures and conclusions.</p> <p>The PAAP contains evidence that the student has met the standards for Communication at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>Analyze research or other literature for accuracy in the design and findings of experiments.</b></li> <li><b>Use journals and self-assessment to describe and analyze scientific and technological experiences and to reflect on problem-solving processes.</b></li> <li><b>Make and use appropriate symbols, pictures, diagrams, scale drawings, and models to represent and simplify real-life situations and to solve problems.</b></li> <li><b>Employ graphs, tables, and maps in making arguments and drawing conclusions.</b></li> <li><b>Critique models, stating how they do and do not effectively represent the real phenomenon.</b></li> <li><b>Evaluate the communication capabilities of new kinds of media (e.g., cameras with computer disks instead of film).</b></li> <li><b>Use computers to organize data, generate models, and do research for problem solving.</b></li> <li><b>Engage in a debate, on a scientific issue, where both points of view are based on the same set of information.</b></li> </ol> |

## Science & Technology Content Standard M -Implications for Science and Technology PAAP Rubric Level 3

*Students will understand the historical, social, economic, environmental, and ethical implications of science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 3. Student work includes little or no use of the concept to describe, predict or explain; represent the concept in many ways; explain the concept to someone else.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 3. Student work includes limited use of the concept to describe, predict or explain; represent the concept in many ways; explain the concept to someone else.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 3. Student work includes some use of the concept to describe, predict or explain; represent the concept in many ways; explain the concept to someone else.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 3. Student work includes the use of the concept to describe, predict or explain; represent the concept in many ways; explain the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Implications for Science and Technology at this Rubric Level and is ready to transition to the next Rubric Level for this Content Standard.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Research and evaluate the social and environmental impacts of scientific and technological developments.</b></li> <li><b>2. Describe the historical and cultural conditions at the time of an invention or discovery, and analyze the societal impacts of that invention.</b></li> <li><b>3. Discuss the ethical issues surrounding a specific scientific or technological development.</b></li> <li><b>4. Describe an individual's biological and other impacts on an environmental system.</b></li> <li><b>5. Identify factors that have caused some countries to become leaders in science and technology.</b></li> <li><b>6. Give examples of actions which may have expected or unexpected consequences that may be positive, negative, or both.</b></li> <li><b>7. Explain the connections between industry, natural resources, population, and economic development.</b></li> <li><b>8. Recognize scientific and technological contributions of diverse people including women, different ethnic groups, races, and physically disabled.</b></li> </ol> |



## Science & Technology Content Standard M -Implications for Science and Technology PAAP Rubric Level 4

*Students will understand the historical, social, economic, environmental, and ethical implications of science and technology.*

| Performance Level 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Performance Level 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Performance Level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Performance Level 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Learning Results Performance Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>Evidence indicates that the student is in the initial stages of development in understanding the content knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 4. Student work includes little or no use of the concept to describe, predict or explain; represent the concept in many ways; explain the concept to someone else.</p> <p>The PAAP contains evidence of limited progress toward the development of rudimentary components of the concept, skills, and knowledge related to this Content Standard.</p> | <p>Evidence indicates that the student has developed basic abilities in the use of the knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 4. Student work includes limited use of the concept to describe, predict or explain; represent the concept in many ways; explain the concept to someone else.</p> <p>The PAAP contains evidence that there are some misconceptions, inconsistencies, and/or vague understandings related to this Content Standard.</p> | <p>Evidence indicates that the student has partially developed the ability to use the knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 4. Student work includes some use of the concept to describe, predict or explain; represent the concept in many ways; explain the concept to someone else.</p> <p>The PAAP contains evidence that the student is progressing toward, but still has some gaps in knowledge or skills and/or inconsistently applies strategies related to this Content Standard.</p> | <p>Evidence indicates that the student has the ability to consistently and accurately use the knowledge identified in the targeted Performance Indicator for Content Standard M, Implications for Science and Technology, at PAAP Rubric Level 4. Student work includes the use of the concept to describe, predict or explain; representing the concept in many ways; explaining the concept to someone else.</p> <p>The PAAP contains evidence that the student has met the standards for Implications for Science and Technology at this Rubric Level.</p> | <p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li><b>1. Examine the impact of political decisions on science and technology.</b></li> <li><b>2. Demonstrate the importance of resource management, controlling environmental impacts, and maintaining natural ecosystems.</b></li> <li><b>3. Evaluate the ethical use or introduction of new scientific or technological developments.</b></li> <li><b>4. Analyze the impacts of various scientific and technological developments.</b></li> <li><b>5. Examine the historical relationships between prevailing cultural beliefs and breakthroughs in science and technology.</b></li> <li><b>6. Research issues that illustrate the effects of technological imbalances and suggest some solutions.</b></li> </ol> |

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